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1978 impact assessment
for Pryor Creek
Estates located in
Yellowstone

**PRYOR
CREEK
ESTATES**

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ENVIRONMENTAL IMPACT ASSESSMENT
for

PRYOR CREEK ESTATES

Located in
Yellowstone County, Montana
November 1, 1978

Prepared by:

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This Environmental Assessment is prepared according to the guidelines of the Yellowstone County Subdivision regulations as amended.

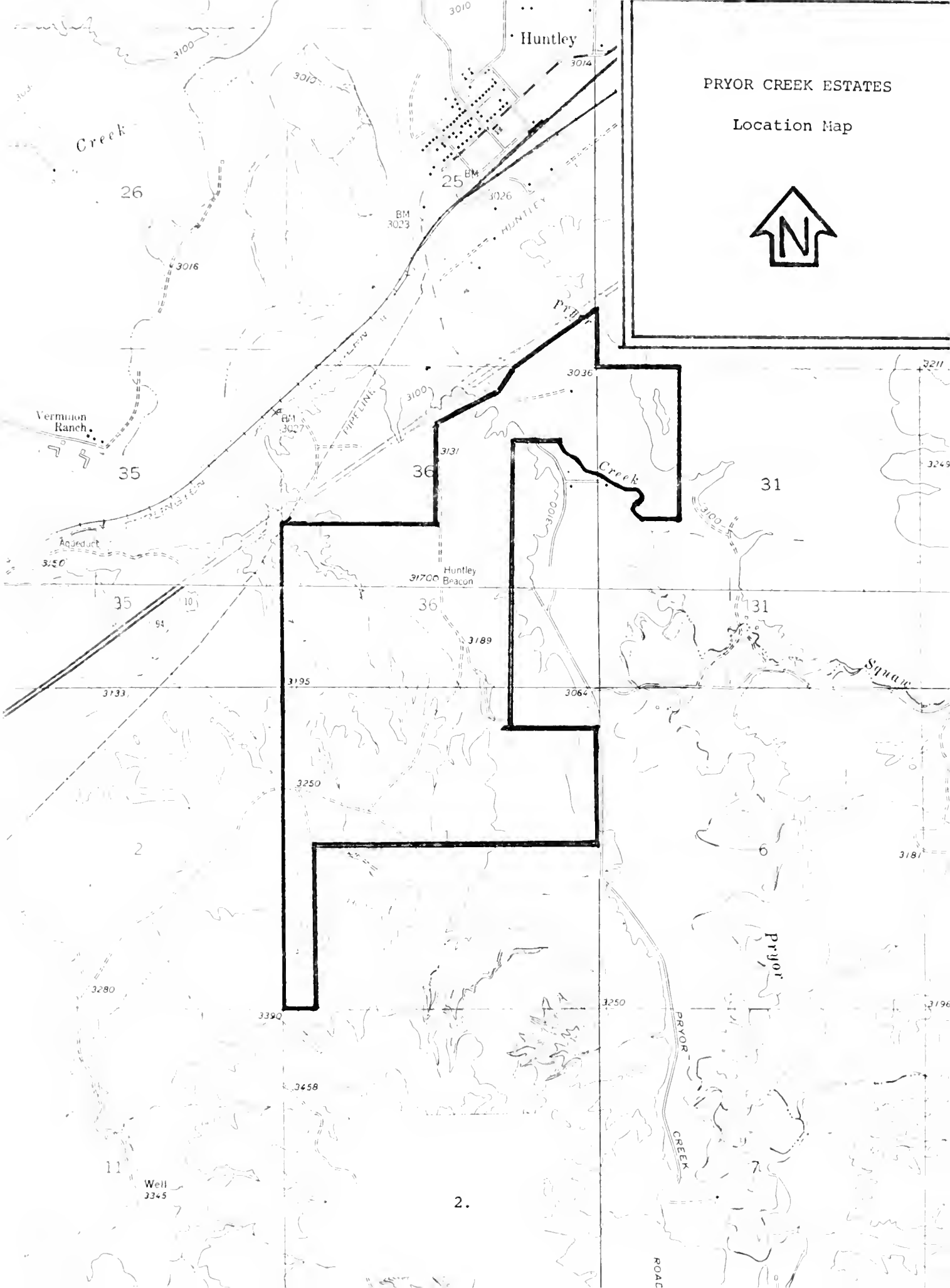
PRYOR CREEK ESTATES is a master planned subdivision located about 9 miles east of Billings, Montana, on Interstate 94 at the Huntley Interchange. This subdivision will contain 962 residential lots, including 11 sites for condominiums; 3 association lots for municipal services; and 264 sites in a mobile home court. Three commercial lots have also been set aside.

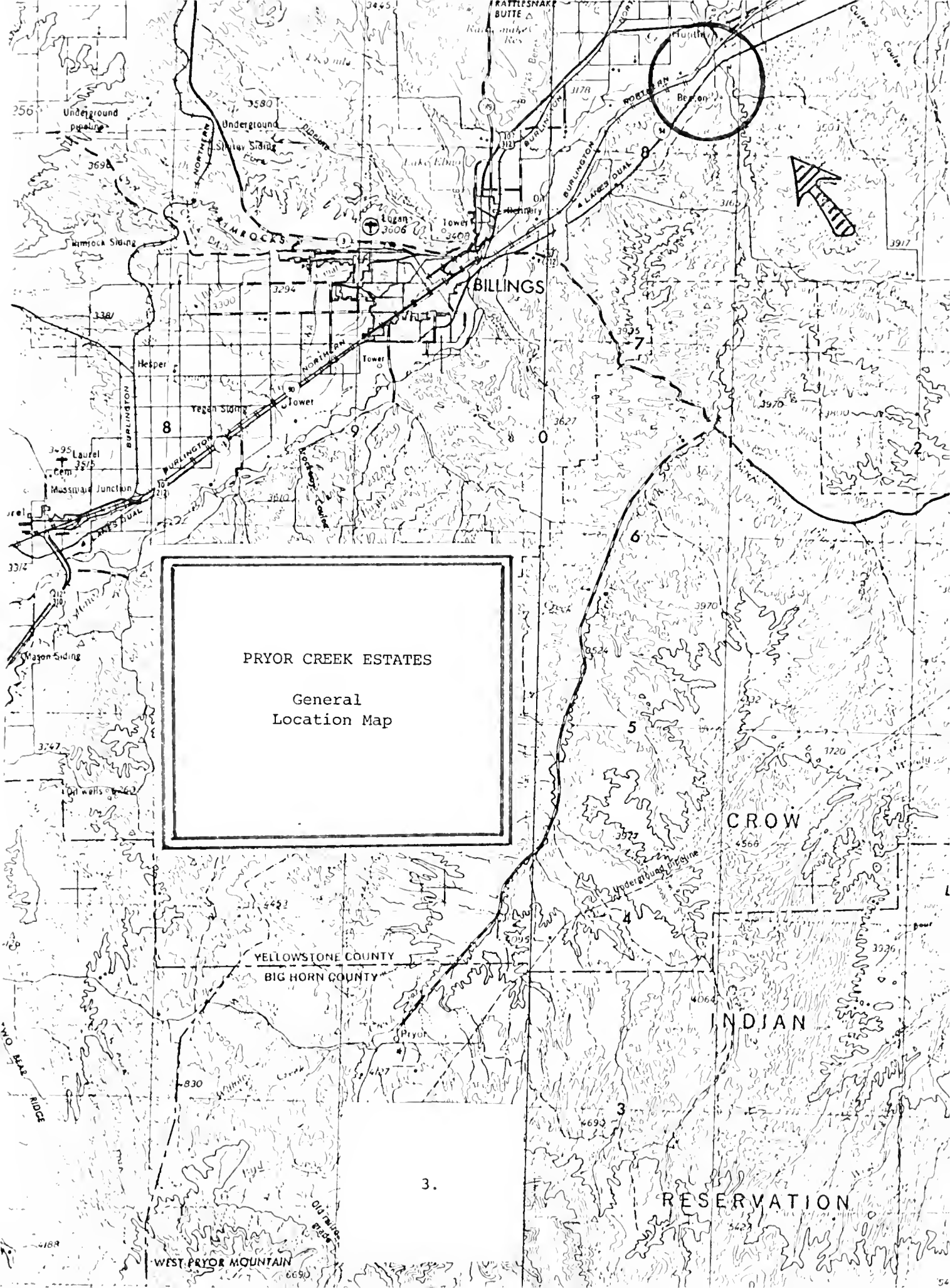
In addition to the housing development, there will be two 18-hole golf courses; one public, and one semi-private. In conjunction with the semi-private course there will be a full service convention center with about a 300 bed capacity.

Water and sewer will be provided with central systems located on the site. Access to the subdivision will be excellent. Development will occur in phases over a period of about 10 years, with initial development consisting of about 60 homes, the golf courses, and the convention center.

PRYOR CREEK ESTATES

Location Map





PRYOR CREEK ESTATES

General
Location Map

BILLINGS

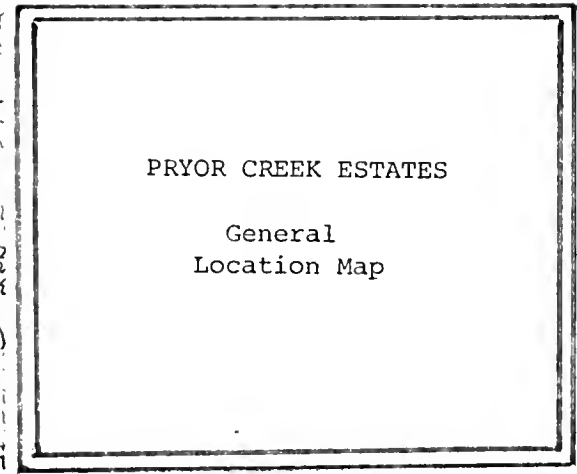
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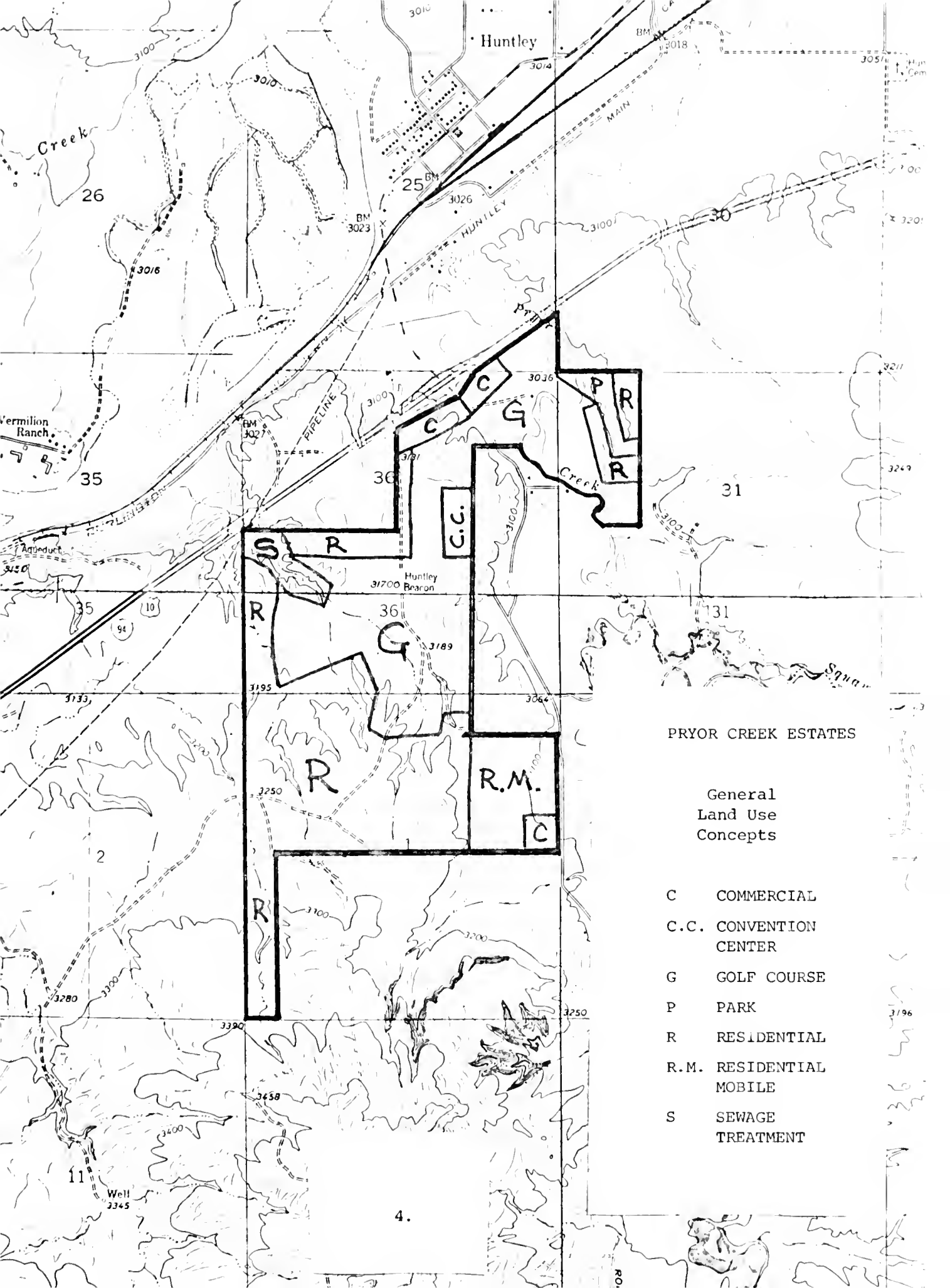
YELLOWSTONE COUNTY
BIG HORN COUNTY

WEST PRYOR MOUNTAIN



3.





PRYOR CREEK ESTATES

General
Land Use
Concepts

- C COMMERCIAL
- C.C. CONVENTION CENTER
- G GOLF COURSE
- P PARK
- R RESIDENTIAL
- R.M. RESIDENTIAL MOBILE
- S SEWAGE TREATMENT

ENVIRONMENT AND EFFECT ON THE NATURAL ENVIRONMENT

1. Surface Water

The topographic maps preceding the body of this report shows the location of the subdivision; the namesake of this subdivision, Pryor Creek; and the Yellowstone River, into which Pryor Creek flows .5 miles below the boundaries of this subdivision.

The Yellowstone River has a measured flow at Billings of 5,000,000 acre-feet per year. It is located about one quarter mile north of the subdivision.

Pryor Creek is a perennial stream originating in the Pryor Mountains 47 miles to the south. The watershed area is 389,400 acres (608 square miles). Elevations in the watershed range from 7,343 feet mean sea level to 3,020 feet mean sea level at the Yellowstone River. Annual precipitation in the watershed averages 14 inches, and the frost free growing season in the area of the subdivision is 125 days.

The average flow of Pryor Creek at the property is currently estimated at 50 to 100 cubic feet per second (September 1978) although this could vary widely. The 10 year average flow of the creek at Pryor, Montana, is 41 ft.³/sec.¹ The main use of Pryor Creek is for irrigation and for watering livestock along its banks. Recreation is a minor activity on the Creek.

Construction anticipated near the creek would be mainly golf fairways and a road crossing.

Recent flood history of the creek includes a rapid snowmelt in the mountains caused by rain in April of 1965 which caused the creek to top the Bureau of Reclamation dike at Huntly, and cause damage to the town of Huntley, the Burlington Northern Railroad right-of-way, and the Huntley Project canal.

More recently, in May of 1978, there was a three day rainstorm with several unofficial reports of 10 to 12 inches of precipitation in an area stretching from the Red Lodge - Joliet area to the Big Horn River at Yellowtail dam and on to Sheridan, Wyoming. This band of heavy precipitation occurred just south of Billings along the foothills. This storm caused



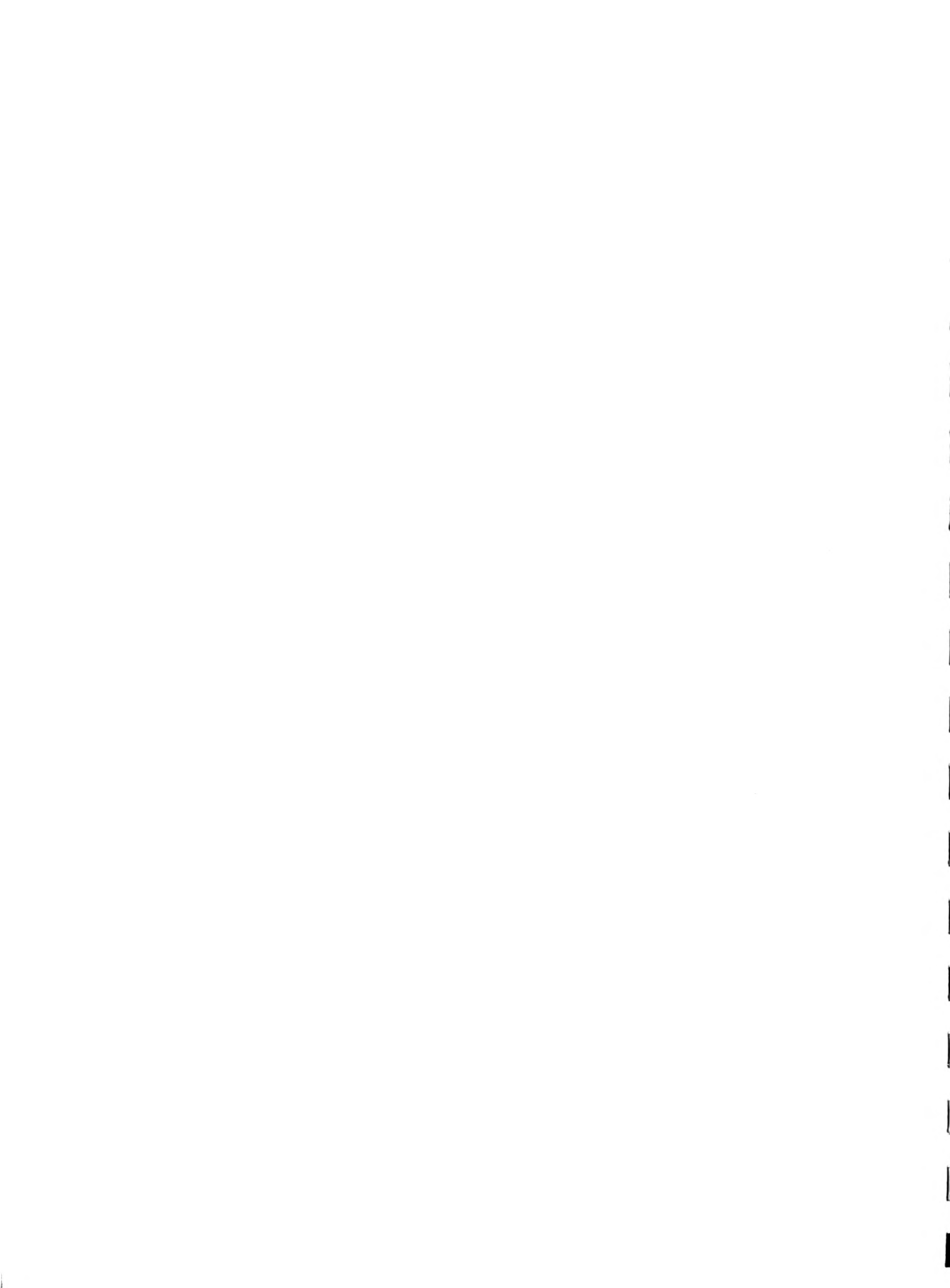
extensive flooding in the Clarks Fork of the Yellowstone, Blue Creek, Pryor Creek, Fly Creek, Big Horn River, Little Big Horn River, Tongue River, and the Powder River.

In the area of concern, the flood damage occurred in the Huntley townsite area, just below the proposed subdivision. The 100 year flood flow at the Interstate 94 crossing of Pryor Creek has been computed at 6,030 ft.³/sec. Peak flows during this flood indicate a flow of 18,200 ft.³/sec. at I-94, or three times the volume of a 100 year flood.² However, one must be careful not to assign a value such as 300 or 500 years to this flood because - 1) it is not so easily calculated, 2) weather data records in the Western United States are of too short a duration to make calculations meaningful.

The causes of the extensive damage to the area around Huntley, to the Huntley main canal, and Burlington Northern, are probably multi-faceted, and there is plenty of blame to go around.

The Bureau of Reclamation dike in 1965 was not very high, the Interstate highway was not built, and the bridge and secondary highway from the Interstate was not built in its present form or height. All of these things added together caused much more restriction in the creek than had ever been noted before, when the 1978 flood occurred. Additional constrictions may have occurred at the railroad bridge on Pryor Creek and the Huntley main canal crossing of Pryor Creek. The developer indicated that the 1965 flood did not cause much problem in his land that is now being proposed for development, nor has there been any problem in past years. The land has been in the developers family for about 60 years.³

At and immediately above the Interstate crossing, the contour maps show a 10' deep channel for Pryor Creek. However, the flooding that did occur in the area of immediate concern, the land within the subdivision, gave the opportunity to gain some valuable records and provide valuable input in the design of the subdivision. A 100 year flood plain has not been delineated for Pryor Creek. However, pictures available do show the area of flooding to be at or below about 3,038 m.s.l.⁴ Therefore, no permanent habitable structures will be built within this area, which is by any standard, much greater than the 100 year flood plain.



The U.S.D.A. Soil Conservation Service has a published report on the feasibility of a multi-purpose reservoir at the confluence of Pryor Creek and East Pryor Creek 9 miles north of Pryor, Montana. The multi-purpose reservoir has a benefit - cost ratio of 2:1 so the reservoir may come into existence someday.⁵

Some streambank modification may occur, probably consisting mostly of brush removal and/or thinning in the areas where the fairways cross the creek. Actual extensive streambank or stream alteration is not proposed, as it would ruin the natural beauty of the area.

2. Groundwater

Groundwater occurs in the subdivision about 14' near the creek in the lower areas to as much as 45' or more in the main area on the upper bench. These figures were determined by a groundwater source test pit at the lowest point in the subdivision, and in the upper areas from water well logs and oil well test logs.

The aquifer recharge area, as indicated by a consulting geologist, would be the areas of the same geologic formation between the area of the subdivision and the face of the Pryor Mountains to the south about 40 miles. (See following section for area geology.)⁶

Depletion and/or degradation of groundwater and groundwater recharge areas will be covered in the sections of the assessment specifically covering water supply and sewage disposal.

3. Geology, Soils, Slopes

The area of the subdivision is located in the Claggett and Judith River formations, formed in the upper Cretaceous period. A water well log in the adjacent tract to the north, owned by Joe Rawlins, has a depth of 165 feet and was classified as Judith River by the well driller. Two oil well logs, in the immediate area, and the U.S.G.S. Madison formation test well all offer extensive data of the formations in the area. The U.S.G.S. test well indicates the top formation as Judith River, with faulting in the immediate area of the well. Below the Judith River is Eagle Sandstone. The Amsden formation in this test well has hot water of 125° F. and 80 pounds pressure. That water had an effective 700' head.⁷



The area of the subdivision is part of a broad fault zone stretching from Rapelje in Stillwater County to Corinthe, about 20 miles southeast of the subdivision, the total length of the fault zone being about 100 miles.

Soils within the subdivision are quite varied as might be expected in a tract this size. Eighteen different soil groups are categorized by the S.C.S. soil manual. These soils are listed in the following pages in a chart form.

The soils in the subdivision are in the Haverson Association, soils of the river terraces, low alluvial fans, and flood plains. Rock falls, land or mud slides, high water table, excessive slopes, and expansive soil conditions are not expected to be a major problem for the many different uses intended within the subdivision. For each different use, the data available within the soil survey will prove invaluable, and is more extensive than can properly be covered in this assessment. When final designs and plans are compiled, the soil survey should be consulted carefully, along with the staff of the Soil Conservation Service.

4. Vegetation

The major vegetation type within the subdivision is grassland with a small streambank group. The alluvial areas within the streambank area consist of grasses, cottonwoods, willows, wild rose, snowberry, and currents. The rest of the site would be in the broad classification of the Silty-Clayey Range Site Complex, 10-14" precipitation zone. Vegetation in the silty range sites include western and thickspike wheat-grasses, little bluestem, needle and thread, green needle grass, blue bunch wheat-grass, prairie Junegrass, native legumes, silver sagebrush, winter fat, and blue grama. The clayey range sites include much the same native vegetation.⁸

A portion of the flat terrace comprising some 20% of the site was farmed until a few years ago, and is now overgrown with Japanese brome (cheatgrass). Environmentally, this area will be vastly improved over its current state as development proceeds, because it is in the area of the golf course and convention center.

As development on the courses proceed, an extensive tree planting program will be initiated. This will include hardy species suitable for the area including pines, maples, locusts, ash, and firs. Tree growth will be enhanced by the on-course watering system.⁹

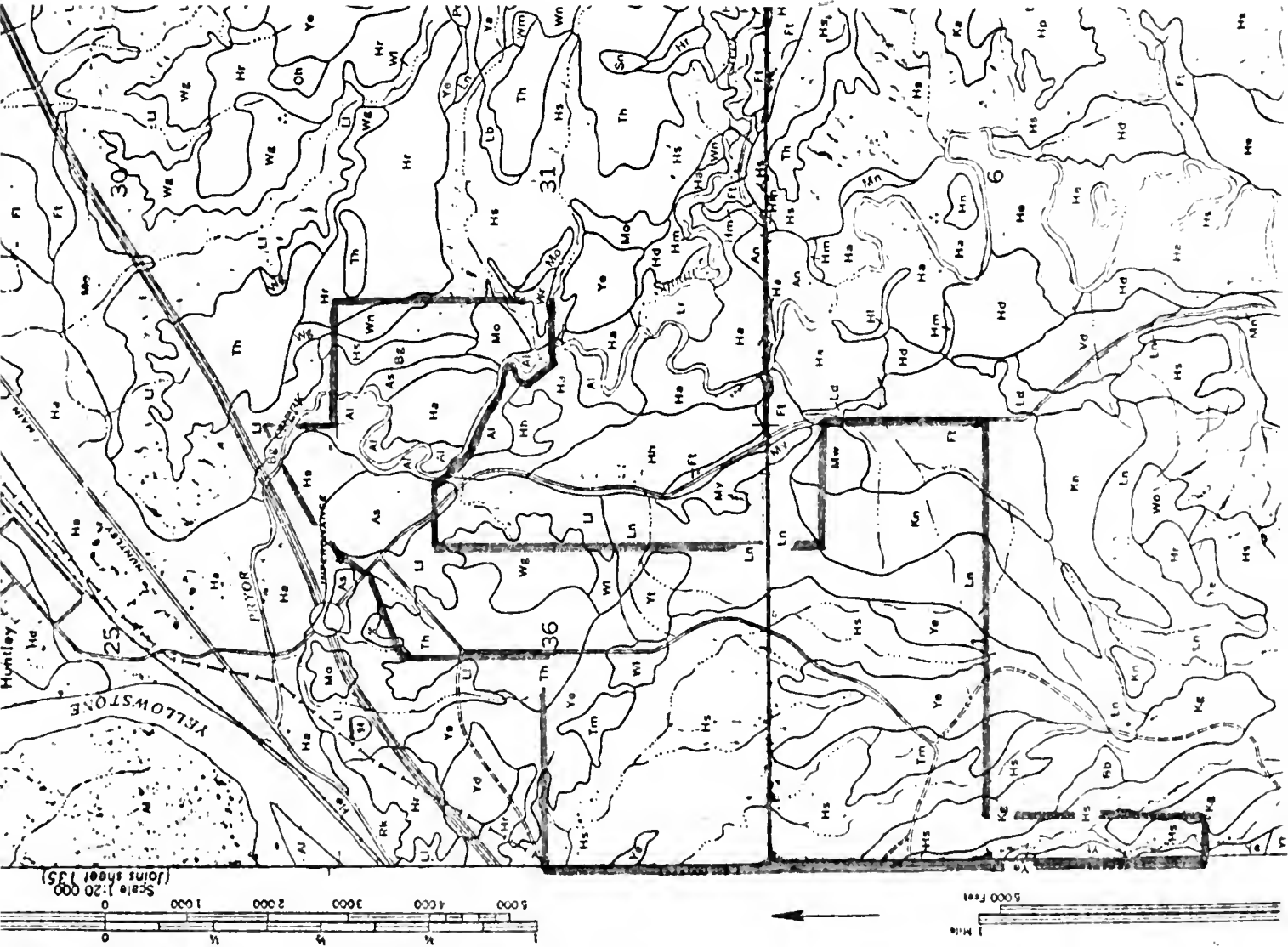
According to the watershed investigation report on Pryor Creek by the



PRYOR CREEK ESTATES
Soil Map

- Al Alluvial land, mixed
- As Apron fine sandy loam, 4-7% slopes
- Bg Bainville Rock outcrop complex, 15-45% slopes
- Ft Fort Collins and Thurlow clay loams, 1-4% slopes
- Ha Haverson loam, 0-1% slope
- Hs Hilly gravelly lands
- Kg Keiser silty clay loam, 4-7% slopes
- Kn Kyle silty clay, 4-7% slopes
- Ll Larim gravelly loam, 15-35% slopes
- Ln Lismas clay, 15-35% slopes
- Mw Midway-Razor clay loams, 4-7% slopes
- Th Toluca clay loam, 1-4% slopes
- Tm Toluca clay loam, 4-7% slopes
- Wl Wanetta-Larim clay loams, 4-7% slopes
- Wn Work clay loam, 4-7% slope
- Wg Wanetta clay loam, 1-4% slopes
- Ye Yegen sandy loam, 4-10% slopes
- Yt Yegen and Toluca soils

SOURCE: SCS Soils Survey
Yellowstone County
1972



SOILS PROPERTIES

Source: SCS Soils Manual
Yellowstone County, 1972

Soil Property	USDA Texture	Permeability Inch/Hr.	Shrink-Swell Potential	Frost-Action Potential
SOIL				
Al	No rating	No rating	No rating	No rating
As	Fine sandy loam	6.3 - 20.0	Low	High
Bg	Silt loam, silty shale	.63 - 2.0	Low	High
Ft	Clay loam or loam	.2 - 9.63	Moderate	Low to moderate
Ha	Loam	.63 - 2.0	Low to moderate	High
Hs	Very gravelly loam, very gravelly sand	2.0 - 6.3 > 20	Low	Low
Kg	Silt clay loam, silt loam	0.2 - 0.63	Moderate to low	High
Kn	Clay	.06 - 0.2	High	Moderate
Ll	Gravelly clay loam	.63 - 2.0	Low	Low
Ln	Clay; Shale below 10"	.06 - 0.2	High	Moderate
Mo	Loam	.63 - 2.0	Low	High
Mw	Heavy clay Loam over shale	0.06 - 0.2	High	Moderate



SOILS PROPERTIES

Source: SCS Soils Manual
Yellowstone County, 1972

Soil Property	USDA Texture	Permeability Inch/Hr.	Shrink-Swell Potential	Frost-Action Potential
SOIL				
Th, Tm	Loam or Clay loam to very gravelly loam	0.63 - 2.0 2.0 - 6.3	Moderate; Low	Moderate to high; Low
Wg, Wl	Clay loam, some gravel; to gravelly sand @ 26"	0.63 - 2.0 20	Moderate; Low	Moderate; Low
Wn	Clay loam	0.2 - 0.63	Moderate	Moderate
Ye, Yt	Sandy Clay loam; Sandy loam	0.2 - 0.63 2.0 - 6.3	Moderate; Low	Moderate; Low



S.C.S., Pryor Creek is not perceived as having a streambank erosion problem. No extraordinary measures are planned for the enhancement of the streambanks.

Trees along the stream will remain in their natural state to the largest extent possible. Some removal may be necessary for a road crossing and for fairway crossings. The natural vegetation is desirable however for its several qualities, including streambank stabilization, and its aesthetic beauty. Some areas of the streambanks may actually be enhanced by additional plantings of trees and grass.

5. Wildlife

There are no known critical, or key wildlife areas including game ranges, waterfowl nesting areas, or habitat for the care of endangered species, nor any wetlands. Therefore, no measures are proposed to enhance or protect any of the above.

Wildlife known in the area include sharptail grouse in the foothills in the area around Buffalo Bluffs Subdivision to the south, and up into the hills to the east of this subdivision in the upper reaches of Squaw Creek, a tributary of Pryor Creek. Pheasants could be expected in the creek bottom along Pryor Creek. No whitetail deer or antelope are known to browse in this area. In an interview with the Regional Supervisor of the Montana Fish and Game Department, it was indicated that the wildlife value of the Yellowstone River in this area of the Yellowstone Valley is pretty much gone. Additionally, the Supervisor felt the impact of this golf course and home development would have minimal impact on the river and creek.¹⁰

6. Historical Features

No known or possible historic, archaeological or cultural sites, structures or objects are known to be present on this site.¹¹

7. Visual Impact

The tree planting program that will be conducted as part of the golf course design will enhance the development and help it blend into the natural surroundings. The fairways will be well designed with numerous water areas. Homes will be built to standards set by the developer, who will protect his investment in a quality development by using carefully worded guidelines for restrictive covenants.



The impact of the homes will be typical of a subdivision of this size, with average lot sizes of about 10,000 to 12,000 square feet, and frontages of 80-100'. The homes in the first phase of development will have minimum square footage requirements of over 1200 square feet.¹²

COMMUNITY IMPACT AND CRITERIA FOR PUBLIC INTEREST

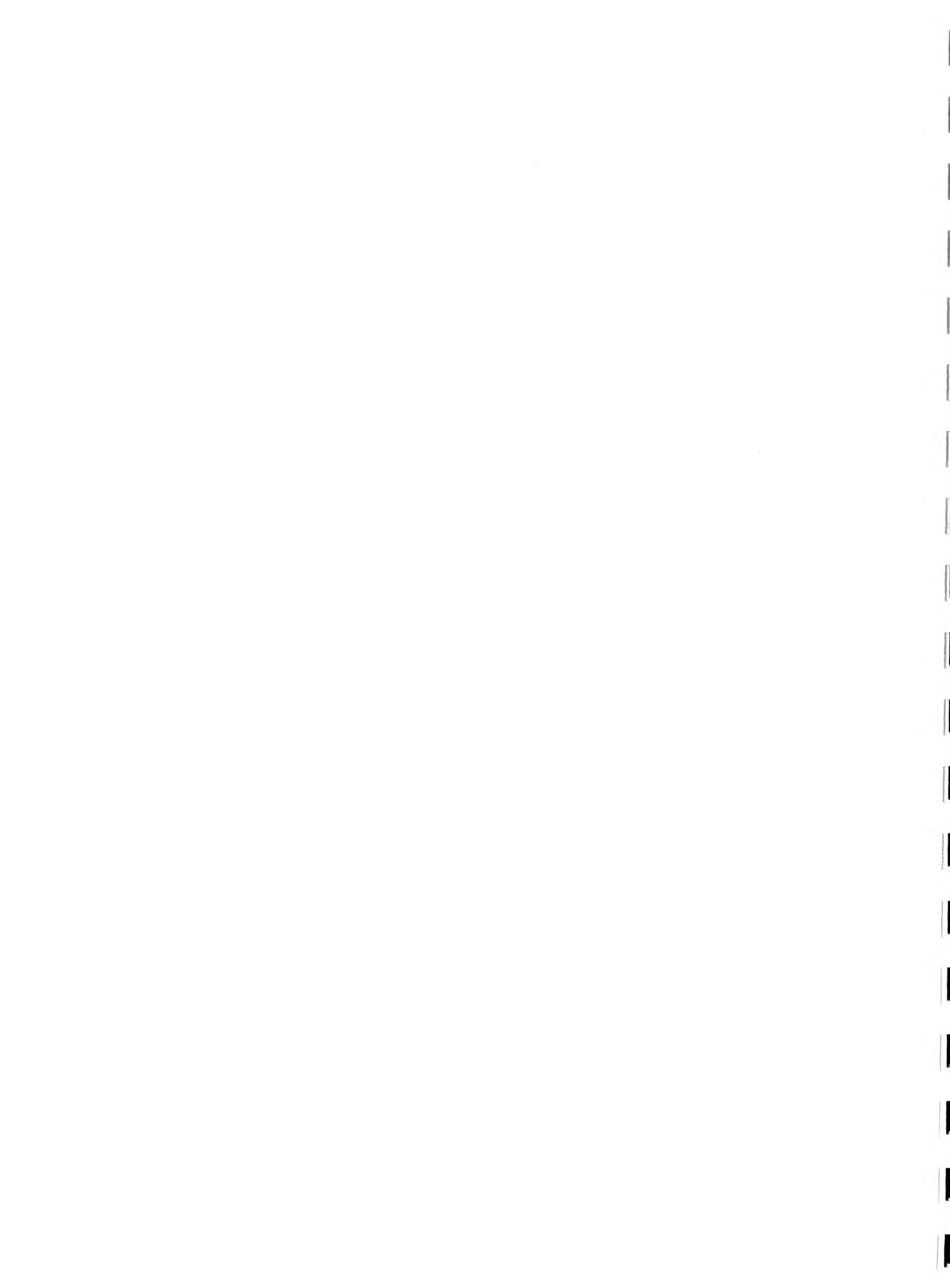
1. Basis of Need for the Subdivision

Yellowstone County has a January 1978 population estimate of 105,500. This is projected to be 111,800 in 1980, 126,800 in 1985, 142,500 in 1990, and 176,400 in the year 2000.¹³ That is a growth rate of 67% to the year 2000. This is at an annual growth rate of about 2.5%. Other indicators of growth in the Billings area are numerous. Bank deposits have risen from \$245.4 million in 1970 to \$495.2 million in 1976. Billings is a regional transportation center with two interstate highways, railroad routes, and the busiest airport between Minneapolis and Spokane. A large amount of the activity in Billings is concerned with energy development, both oil and coal. Should Colstrip 3 and 4 be approved for construction, the boom is expected to accelerate. The boom is not entirely energy related. As an example, the largest employer in Billings is the medical community.

Since this is perceived as subdivision made up of both primary housing and recreational opportunity (golfing), the basis of need will be considered on that concept.

The growth referred to above indicates the continuing need for housing development in the Billings - Yellowstone County area. The concept of the subdivision will provide central municipal services that are more often than not left up to the individual - that is - sewer and water. Additionally 36 holes of golf will be provided.

Recently, a large amount of interest has been shown in additional golf facilities in the Billings area, after a development was proposed in a large county park located adjacent to the Yellowstone River just east of Billings. The County Commissioners held a public hearing on the proposal, and the general concensus of the hearing and the numerous letters to the editor in the Billings Gazette seemed to be that a very real need exists



for additional golf facilities in the Billings area, but that Coulson Park was not the proper place.

National Golf Foundation research has indicated that a population of 25,000 to 30,000 is necessary to support one regulation - length, public golf course, regardless of the nature or number of private facilities in the area. Private courses are advised to seek markets of 50,000 for each public course. Also golf courses should have other desirable features such as proximity to the population center, good access, and course visibility from arterials.

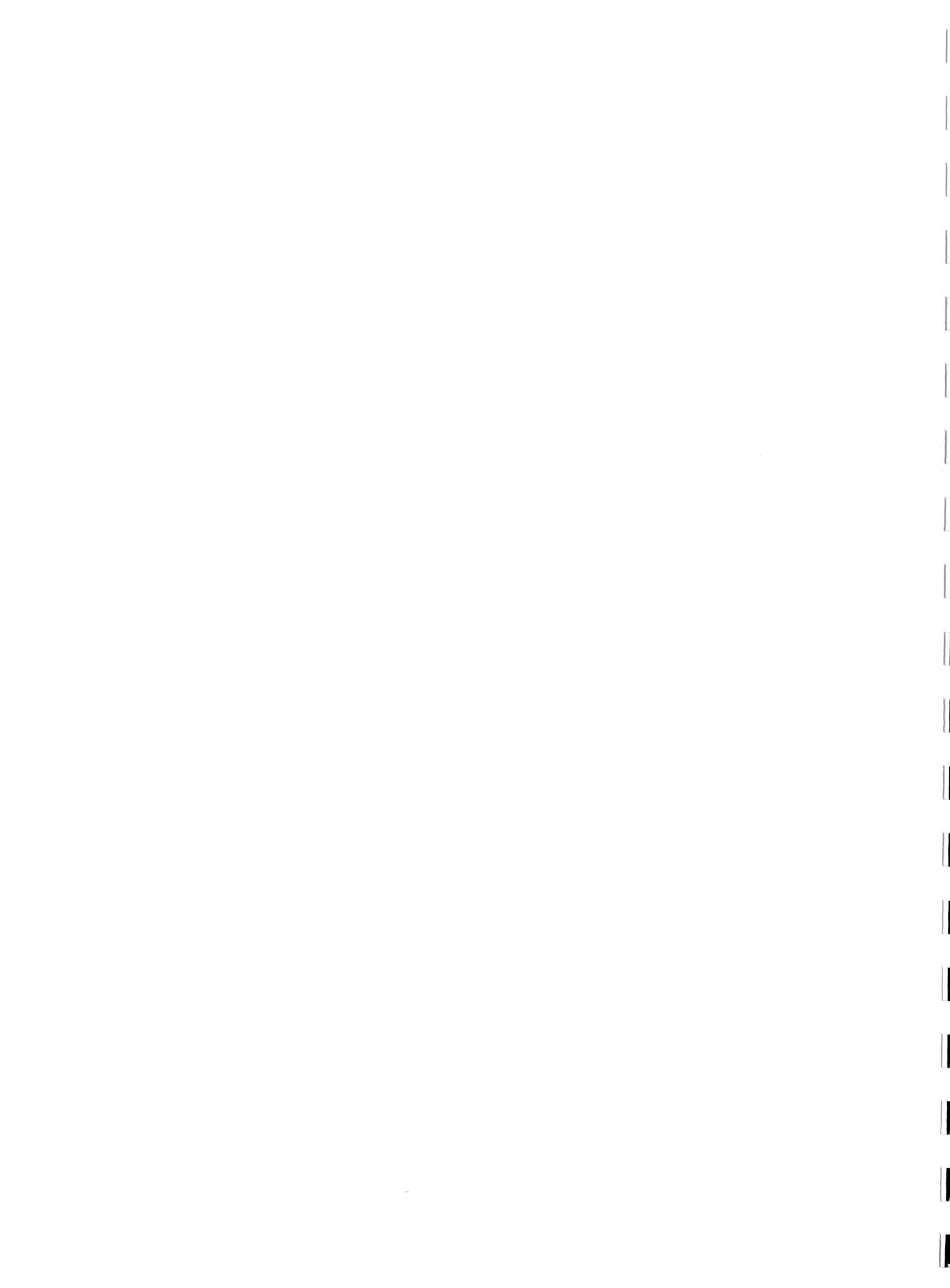
Research indicates that about 7.1% of the American population plays golf, so the current (1978) golfer count in the area would be:

Billings	5,440
Metro Area	6,580
County	7,490

A National Golf Foundation report on the Billings Market says, "estimating that the three private golf facilities (Yellowstone Country Club, Highlands Country Club, and Laurel Country Club) serve approximately 2,500 golfers, more than 4000 others in the metropolitan area have only one daily fee course (Lake Hills Golf Club) at which to participate in golf". The report goes on to indicate that the new Par-3 course which will be operational in the spring of 1979 will aid all existing and planned facilities in that it will develop new golfers, and will develop an even greater demand for more full-length golf in the market area.¹⁴

The developer feels that his course will have excellent access to the Billings Market, being about 9 miles from the Huntley interchange to the Lockwood interchange, another 3 miles to South 27th Street interchange, and 4 more miles to the West Billings interchange, for a total travel of 16 miles from the west side of Billings on interstate highways to the entrance of the golf course. Additionally, tourist participation is expected at the golf course with its prime location at a full exit. 1977 average daily traffic on the interstate in this area is 2565 to 3400 units.¹⁵

In addition to fulfilling the very real need for additional golf facilities in the Billings area, this subdivision will supply about 10% of the current need for housing lots in the Billings area, on a year to year



basis. The growth as discussed in the earlier part of this section is very real, and from a planning standpoint, it is better to deal with the growth in planned developments such as is being proposed here.

Price of the lots in the development cannot be determined at this point, as several of the major component costs have not been exactly determined, nor will they be determined for some time. This would include cost of sewer, water, and road development. However, one major component of the development costs - the land - should be low as the land has been owned by the developer for several years. Therefore, it is expected that land costs per lot will be able to remain competitive in the market place. Acreage in the area (irrigated) sells for about \$3500 per acre in small tracts, and \$1,000 to \$2,000 per acre (non-irrigated) both without developed water and sewer.

The setting of the subdivision, with all improvements being provided, superior access, and vistas of the surrounding creek, river, valley, and hills, will be its main appeal and that which makes it distinctive.

2. Expressed Public Opinion

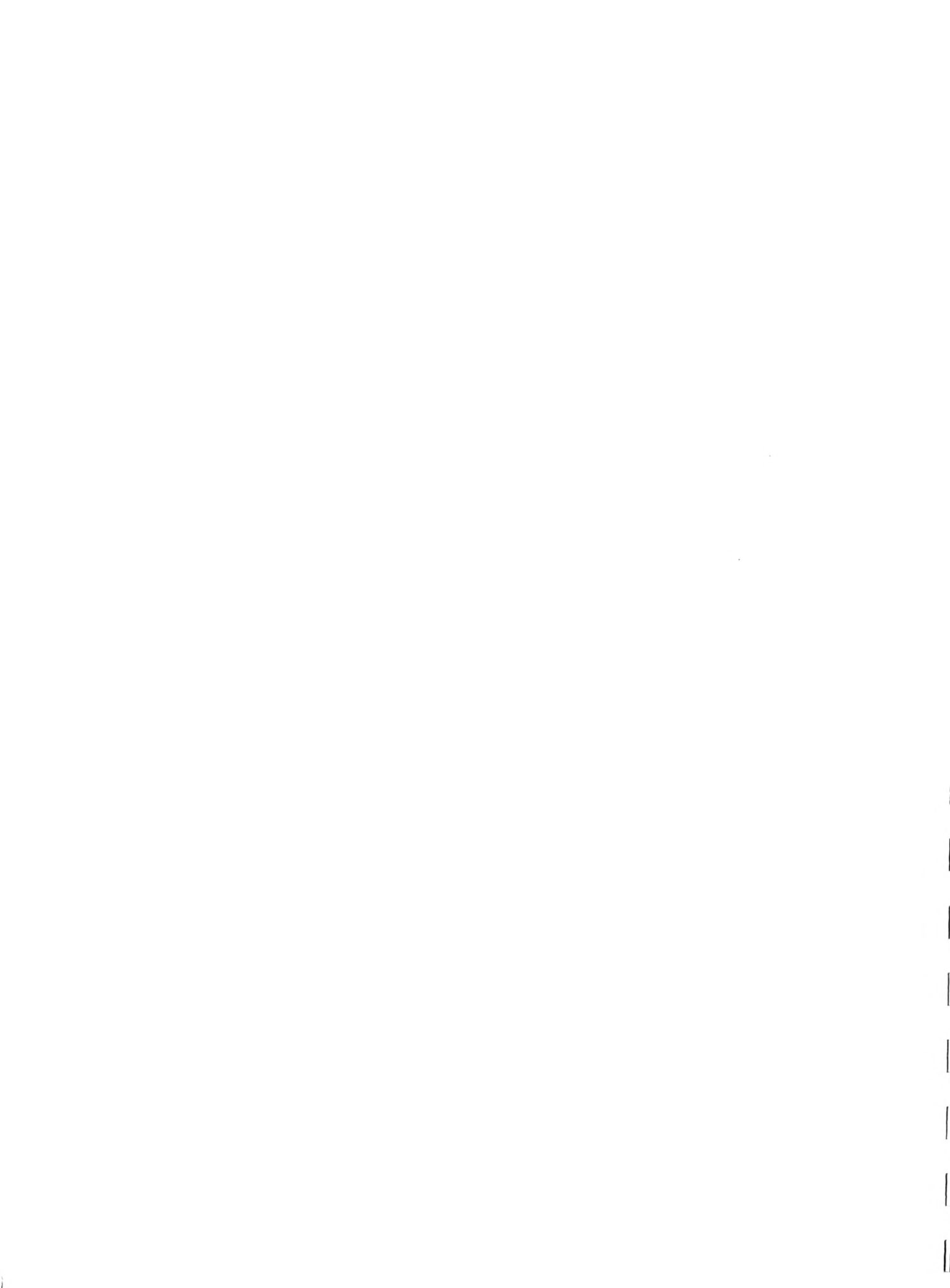
The names and addresses of all adjacent property owners are supplied on the Preliminary Plat. These and other interested parties shall have an opportunity to comment on the proposed subdivision at the public hearings on the preliminary plat.

3. Effects on Agriculture

Currently the entire tract has about 35 acres of rolling and sloping meadows in the production of hay and forage and about 60 acres of dryland producing wheat. The production to be expected would be about 50-70 tons of hay and 600 bushels of wheat. (Half of total 2 year production, including fallow). The productivity of the land is quite variable. For example, part of the lowland designated for golf fairways is apron fine sandy loam, which has a S.C.S. rating of IVE-2 for dryland, and no rating for irrigated. The Haverson loam is rated I-1 irrigated and IIIc-1 dryland.

The portion of the tract used for dryland wheat is rated III and IV.

The property has been used in recent years for its speculative value, rather than its farm potential.



The general uses of land in the area are mixed between subdivisions and agriculture. Several certificates of survey surround this tract, ranging in size from a few acres to one survey of 3,000 acres of 10 acre tracts. True agricultural interests are mostly to the east across Pryor Creek, and upstream about one mile on Pryor Creek. One block of farmland exists to the immediate west of this subdivision.

The remainder of this tract is not being used for any agricultural purposes.

4. Effects on Local Services and the Public Health and Safety

Water. Water for domestic use and fire protection will be provided by a new central water system located on-site. Total water use is estimated at 1,498,247 gallons per day (domestic, home irrigation, convention center, and golf course) or 1678 acre-feet per year.

The developer has water rights dating back to 1912, 1909, and possibly 1906. These are water rights #2, 12, and 21 on Pryor Creek; #12 and #21 totaling 10 cubic feet per second and 136 inches. One cubic foot per second totals 646,272 gallons per day or 1.98 acre-feet per day. Ownership of water right #2 has not been finally determined at the time of this writing, but research is continuing on it. Definitely established water rights of 10 cfs and 136 inches (40 inches = 1 cfs; $136 \div 40 = 3.4$ cfs) or 13.4 cfs equal 9701 acre-feet per year.¹⁶ Total water use is estimated at 1678 acre-feet per year, which is 17% or less of the water rights available.

Plans for the water supply will be submitted to the State Department of Health and Environmental Sciences after preliminary plat approval for their review to determine if the plans are adequate for quality, quantity, and construction. Preliminary indications of quantity have just been discussed. Construction plans and quality guidelines will be the area for the project engineer to deal with. Copies of four water tests of potential water sources have been included in this report for preliminary consideration of reviewing agencies. The engineer is already considering these reports.

The general concept of the water system as it is now being formulated is withdrawing surface water from Pryor Creek, with two backup designs. One backup would be shallow wells in the area of the creek or on-site at some



point, and the other backup concept being considered is a withdrawal from the Yellowstone River. Another temporary consideration may be to tie in to the community water system of Huntley for part of the initial phase of about 60 homes. This final consideration is only tentative, and no official approval has been granted for that purpose. The quantity and quality of the Huntley system is marginal, and the project engineer indicates that this water might have to be withdrawn at low use times (night) and stored. Regardless of whatever water system is used, storage will be provided on-site.¹⁷

The water system will be financed by Rural Special Improvements District (RSID). A maintenance district will administer and maintain the system both at the beginning of development and at completion.

Final design of the water system will depend on two considerations:

1. Economics (cost and cost effectiveness),
2. Dependability of water source.

These constraints will be considered in more detail as the project moves forward.

Sewage Disposal. Tertiary sewage treatment with an application of the excess effluent on-site will be the principle method of sewage treatment. The estimated gallons of effluent per day is about 505,000 gallons at full development. The system will be designed to meet the final design population of the subdivision. Presumably it will meet the standards of the State Department of Health and Environmental Sciences before final approval is given by that agency.

"Land treatment systems involve the use of plants and the soil to remove previously unwanted contaminants from wastewaters. Land treatment is capable of achieving removal levels comparable to the best available advanced wastewater treatment technologies while achieving additional benefits. The recovery and beneficial reuse of wastewater and its nutrient resources through crop production (grass fairways in this case), as well as wastewater treatment and reclamation, allow land treatment systems to accomplish far more than conventional treatment and discharge alternatives.

Because they contribute to the reclamation and recycling requirements of P.L. 92-500, land treatment processes should be preferentially considered as an alternative wastewater management



technology. While it is recognized that acceptance is not universal, the utilization of land treatment systems has the potential for saving billions of dollars. This will benefit not only the nationwide water pollution control program, but will also provide an additional mechanism for the recovery and recycling of wastewater as a resource."¹⁸

Land application of treated effluent is not a new concept. Evidence of these types of systems extend back to ancient Athens. Early use in the United States occurred in the 1870's. The following two tables show an increase in use over the last 40 years, although the number of systems in 1972 is only a small part of the 15,000 systems in operation in this country.

In this state, as far as could be determined, at least three land application systems are approved and operating. Yellowstone Country Club (Billings) has a system that just recently went into operation. That system has a maximum design capacity of 365 homes and 90 are in use now.¹⁹ Riverside Golf Course in Bozeman also has a similar system. The Big Sky Resort has a system designed for 7,000 population or 450,000 gallons per day. That system can be expanded to 10,000 population. Big Sky's system is secondary treatment only. The Environmental Protection Agency did not require tertiary treatment at Big Sky (a sand filter was proposed) as they felt it was unnecessary, and did not want to pay grant money for the more expensive tertiary treatment.

Effluent for the Big Sky system is approved for land disposal on the golf course, but population has never warranted that use. 1979 is the first year that will require application on the golf course.²⁰

Estimated sewage flow per year for Pryor Creek Estates is 513 ac/ft/yr. Estimated golf course water requirements are 720 acre-feet per year. Treated effluent would supply only about 60% of the golf course requirements.

The treatment system envisioned at this time will consist of primary and secondary treatment on-site, probably by expandable package plants, and will include a large reservoir for a tertiary treatment or "polishing pond", which will include holding capacity for winter months.²¹

The system will be financed by RSID, and operated by a maintenance district that will be created.



WATER AND SEWER REQUIREMENTS

Domestic water supply (962 standard units, 264 unit mobile home court)

in-house standard	$962 \times 3.2 \text{ people} \times 100 \text{ gcd} \times 365 \text{ days}$ <u>325,900 gal. (1 ac/ft)</u>	=	344 ac/ft/yr, .94 ac/ft/day
irrigation (lawn, trees)	$962 \times 9,000 \text{ sq. ft.} \times 2 \text{ ac/ft}$ <u>43,560 sq. ft.</u>	=	397 ac/ft/yr, 1.08 ac/ft/day
in-house (mobile)	$264 \times 2.5 \times 80 \text{ gcd} \times 365$ <u>325,900</u>	=	59 ac/ft/yr, .16 ac/ft/day
irrigation (mobile)	$264 \times 4,000 \text{ sq. ft.} \times 2 \text{ ac/ft}$ <u>43,560</u>	=	48 ac/ft/yr, .13 ac/ft/day
Golf Course	2 acre/feet per year x 360 ac.	=	720 ac/ft/yr

Convention Center (Assume 300 bed motel, w. laundry/meals/pool)

300 beds x 2 population x (365days @ 90%) x 175 gcd	<u>325,900</u>	=	110 ac/ft/yr
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T O T A L 1.168 ac/ft/yr

SUMMARY OF WATER REQUIREMENTS

	Domestic (ac/ft)	Irrigation (ac/ft)	Total
Golf Course		720	720
Standard housing	344	397	741
Mobile home court	59	48	107
Convention center	110		110

SEWAGE SYSTEM YEILD

Standard housing	344
Mobile home court	59
Convention center	110

TOTAL WATER REQUIREMENTS 1,168 ac/ft/yr

TOTAL SEWER REQUIREMENTS 513 ac/ft/yr



Solid Waste. Sanitation services will be provided by private waste haulers. D & F Sanitation Service has indicated they could handle the entire subdivision.²² The solid waste would be disposed of in the City of Billings landfill, which has an operating agreement with the County to accept all solid waste generated by Yellowstone County and the City is reimbursed for this on a percentage of total operating cost basis. The City will continue to accept solid waste as long as there is an operating agreement with the County.²³ Disposal in the City Landfill would presumably meet Department of Health guidelines, as it is an approved facility.

Roads. This subdivision should not require construction of any new access roads or special improvements to any existing roads not within the subdivision.

An existing road within the subdivision, the Yellowstone Trail, will be relocated and will be paved. The Pryor Creek Road, as it courses south through the subdivision, is a designated arterial, and is already paved. All proposed roads within the subdivision will be paved. Streets and roads will be constructed with curb and gutter, and where necessary, storm drainage will be provided.²⁴ At the time subdivision application is made to the State Department of Health and Environmental Sciences, guidelines will have to be submitted detailing the prevention of water pollution from on-site drainage.

When fully developed this subdivision could generate 9,000 to 10,000 vehicular trips per day. The Pryor Creek Road has no traffic counts available. The Interstate-94 has traffic counts broken into several segments as follows:

Huntley to Ballantine

1977	ADT	2565
1976	ADT	2746
1975	ADT	2547

Pine Hills (I-90 & I-94) to Huntley

1977	ADT	3400
1976	ADT	3384
1975	ADT	2866

Pine Hills to Lockwood

1977	ADT	6550
1976	ADT	6894
1975	ADT	5732

The estimated capacity of the Interstate route is 25,000 ADT.²⁵ The functional capacity of the Pryor Creek Road is estimated at 12,000,²⁶ with 350 estimated ADT now. So the Interstate is currently carrying 10% to 26% of capacity in the three areas listed above. In addition Lockwood to 27th Street is at 32% of capacity; and 27th Street to King Avenue-West Billings Interchange is at 30% of capacity. If this subdivision generates 10,000 trips (1214 units x 7 trips = 8498 ADT + 1500 for commercial and golf = 10,000), then dividing the trip generation by the following destinations will be assumed:

- 57% of trips on Interstate 94 to Billings
- 21% of trips on Interstate 94 to Ballantine
- 22% of trips on Pryor Creek road towards Huntley

With these assumptions, this would raise the traffic to the following amounts, with per cent of rated capacity in parenthesis:

I-94 Pine Hills to Huntley	-	9,100	(36%)
I-94 Pine Hills to Lockwood	-	12,250	(49%)
I-94 Huntley to Ballantine	-	4,665	(18.6%)
Pryor Creek Road northbound from Interstate	-	2,550	(21%)

Additional traffic generated because of the subdivision will include golfers who are passing through the area and stop off from the Interstate. Other traffic considerations will be traffic generated by the convention center. Most of this additional traffic will use the Interstate, which should still be well within its design capacity. Estimates of golf trips might be 250 daily trips on a nine-month basis.

This brief analysis of roads in the area indicates that existing and proposed roads and intersections should be able to safely accomodate the traffic that will be generated.

Utilities. At the time the preliminary plat is submitted, the utilities affected by this subdivision will receive a preliminary plat. The utilities

affected are Project Telephone Company and Yellowstone Valley Electric Cooperative. Natural gas will not be available to the subdivision.

Contact made with the managers of these two utilities in preparation of this assessment resulted in generally favorable comments.

Mr. Walt Pierce, manager of the Project Telephone Company, indicated that equipment located in the central office at Huntley would have to be increased, and the cable out to Pryor Creek would have to be enlarged. His feeling was that this would be no problem with his company. Service would consist of one party service, and all service lines would be underground. One service that Project Telephone Company would like to discontinue is the "FX Circuit" which is a direct line into Mountain Bell equipment in Billings. The company currently has a request to discontinue this service pending before the Public Service Commission. Currently, if a customer has FX service, he can dial direct into Billings without being charged for a long distance call. If FX is discontinued, then each call to Billings would cost \$.25. FX service has a monthly charge on the base bill, so the charges would offset each other to an extent, but would put the burden on those using the long distance services to a larger extent.²⁷

Mr. Howard Zahller of Yellowstone Valley Electric Cooperative indicated his utility would be in a good position to supply power to additional development through about 1981 or 1982. After that, forecasting his power supply becomes more difficult. Yellowstone Valley Electric is a part of a federation of cooperatives that form Central Montana Generation and Transmission. This federation has rights to 10% of the power from Units 3 and 4 at Colstrip. Should that source not develop, then Central Montana Generation and Transmission may get power from a plant in Wyoming. The problems involved with power generation from new plants is the reason for Mr. Zahller to indicate that predicting supply becomes more difficult after about four years. As noted though, power supply can keep up with demand and growth for the near future.²⁸

All utilities would be underground. Completion date of utility line extensions would be of normal duration once construction started, according to the managers.

Emergency Services. The proposed subdivision is not in a rural fire district, nor is one proposed at this time. The town of Worden is a fire

district with set levies, the surrounding areas of Worden, including the town of Huntley are in the boundaries of the Worden Department and are served by subscription to that department. Their boundary, set by the Yellowstone Valley Fire Council, is the Pryor Creek Road, therefore the bulk of this subdivision would be outside the district.²⁹ The majority of the fire protection would be, therefore, from O'Donnell Fire Service, a private service obtained through yearly subscription. A spokesman for O'Donnell's indicated that they may be moving their headquarters station, currently located in downtown Billings, to the area of the proposed interchange at Johnson Lane and Interstate 90-94. This would put response time at about 7 minutes to the entrance of the subdivision. This assumes two things - 1) the move be made within about two years, 2) the interchange be built. O'Donnell's has indicated that they may in fact move within that time frame.

O'Donnell's also indicate that the magnitude of development would warrant a substation at or near the site sometime after the convention center and the initial phase of home construction is underway, but long before the development would be complete.³⁰

Fire protection, then, is planned by private subscription service. Each homeowner would have to subscribe for protection. The developer would subscribe for the commercial areas.

Police protection would be provided by the Yellowstone County Sheriff's Office, which has two deputies currently in the Huntley area. The undersheriff felt his services would be adequate for the initial stages of development. Additional personnel would probably be required as growth expanded.

Ambulance service would be provided by private services from the Billings area. Richard Taylor, of Billings Ambulance, indicated his firm, located on the east side of Billings, could handle the subdivision with no problem. He has five ambulances now, all radio equipped and tied in to all emergency and police frequencies. There will soon be a jet helicopter with service to St. Vincent's hospital. Current response time is about 14 minutes to the area of development but would decrease with the helicopter capabilities.

Medical services would be provided in Billings, which many consider to be a regional medical hub. Two major hospitals, medical and dental clinics and children clinics exist, and a cancer treatment center. Deaconess Hospital is currently in the beginning stages of expansion, and St. Vincent's Hospital recently completed a major expansion of patient care facilities. These medical facilities are expanding to meet the growth occurring and projected to continue, for all the Billings area.

All of the private emergency and medical facilities expand as a result of population growth and their expansion is met by private funding and subscription and is not a burden on the tax structure. Ambulance and medical requirements are non-directional, responding to total growth. Fire protection would be impacted, but the impact can be handled. Police protection may be increased in the future at the expense of the general tax incomes.

Schools. The Huntley - Worden School District #24 would serve this proposed subdivision. This school district currently has the following breakdown of student population:

377 Elementary (K-6)
170 Junior High (7-9)
173 High School (10-12)

720 Total Student Population 1978

The school population has decreased in the past two years, but it increased in the three years previous to that. The addition of kindergarten added 40 students to the total population. Also, if Colstrip units 3 and 4 (proposed power generation units at Colstrip, Montana) are approved, the school district would gain an additional 35-40 students in a very short time.

The school district has a relatively modern set of physical plants. The elementary school was built in 1955-1956. The high school was built in 1967-1968. The junior high school was built in 1938 and was converted to a junior high from a high school when the new high school was built. The three schools are all located on one campus at Worden, Montana.

The elementary school is the most crowded of the three school buildings, with no additional classroom space available. The junior high school could take 30-35 more students, and the high school could increase to 225 from the present 173, with some work such as adding lockers; and if student distribution

was just right, the school might hold the 270 students it was designed for.

The school district currently has a bonded indebtedness of \$220,000, and has a bonding limit of \$1.4 million elementary and \$1.3 million for secondary. Bond issues were proposed in November of 1977 and June, 1978, for additional space. The first vote was negative by a margin of 65, and the second vote was negative by a vote of 25 out of 535 votes cast. The bond issues proposed would have added 28-29 mills to the current 167.11 mill levy.³¹

The initial phase of the subdivision development would be about 60 homes, and 50 mobile homes. At 1.2 students per home, this would be 132 students in the first few years after development started. Initial home construction probably would not begin before the spring of 1980, which would add the first students in the beginning of the 1980-1981 term.

The first term of school could possibly handle the growth from this subdivision's first phase. After that some new facilities, personnel, and buses may become necessary. The total estimated school population from this subdivision at total development (estimated 1226 units x 1.2 students) is 1471 students, which is more than double the current school district population. It becomes quite obvious then, that new facilities will be needed to handle the growth of this subdivision at some point in the future.

Initial development of this subdivision would have the convention center and golf courses first, which would produce an estimated \$70,000 in tax revenue per year, (1978 rates). These taxes would be paid each year in addition to the estimated taxes of \$806,000 (1978 tax rates) paid by the home owners at full development. (See "Taxation" section).

Additional commercial development is proposed for the north side of the Huntley interchange (by the developer), in addition to several commercial tracts within the boundary of the proposed subdivision. Specific plans at this time are somewhat sketchy but include the following:

1. Full service truck stop and restaurant (north side of interchange)
2. Convention center
150 rooms, bar, restaurant, swimming pool
3. 36-hole golf course

These portions of the total development pay a large share of the taxes of the entire master planned area, but generate no students. Additionally, jobs will be generated for the community.

The housing development in the early years will pay less taxes than the cost of the impact, however this will be offset to an extent by the commercial development taxes. At full development using \$600 average tax per standard housing unit (1978 taxes), taxes would be:

$$962 \text{ units} \times \$600/\text{unit} = \$577,000 \quad (1978 \text{ rates})$$

These total taxes changed to reflect the inflation factor of 10% (the same percent the school district used in its calculations) would increase the tax revenue on the homes to:

\$1,496,000

Additionally, the commercial taxes (for the uses known at this time) estimated at \$70,000 (1978 rates) assuming they come on line three years after initial development begins would increase to \$81,561 at the end of a 10-year development program. Additional commercial development would add additional tax revenue.

The developer plans on reserving an area for school development in a 500 acre tract of land that he owns one-quarter mile to the south of this development. This area would serve both this development and the surrounding tracts known as Buffalo Bluffs and Shadow Canyon (C.S. 1363).³²

In considering the impact of this, or any development, on schools, (which are usually among the most immediate and most heavily impacted facilities), one should also consider other factors which bring about the development, such as the need for well planned housing and recreational need. These factors are covered in another area of this report, "BASIS OF NEED".

The letter of the school administrator has been included as a part of this assessment.

Huntley Project Public Schools

CALVIN G. MCRAE, SUPERINTENDENT

Worden, Montana

Mr. Jerry Cormier
Project Consultant on Link Subdivision
P. O. Box 437
3203 3rd Ave. N. / Suite 303
Billings, Montana 59103

October 25, 1978

Dear Mr. Cormier:

The following is the information you requested for the Environmental Impact Assessment on the proposed Elmer Link subdivision on Pryor Creek.

1. District Bonding Capacity	
Elementary	\$1,433,150
High School	\$1,534,846 - \$221,049 = \$1,313,797
2. Outstanding Bonds	
High School	\$ 221,049
3. Present Enrollment	
Elementary	377
Junior High	170
High School	173
Total	<u>720</u>

4. Size of Facilities
Elementary Building (K-6) The present elementary building consists of 14 Classrooms, 1 projection room, lunch room, gymnasium, and offices for Principal and Superintendent. This building is 23 years old.

Junior High (7-9) The Junior High consists of 7 Classrooms, study hall, gymnasium, and Principals office. This building is a 2 story, 40 year old building.

High School (10-12) The High School consists of 9 Classrooms, study hall-library combination, gymnasium, and Principals office.

Shop (Serves 7-12) The shop consists of 1 Classroom and 2 small shop areas. Total size is less than 5,000 square feet of usable space.

5. Facilities that might serve this subdivision.
The School District had planned a building which would include a shop, home economics facilities, business facilities, and 9 classrooms. The present cost of the facility would be about 1.6 million dollars. It was defeated at the polls twice.

6. School Bus Accommodations

Our present busing for students includes 10 buses. The District buses approximately 550 students. Only 1 bus serves Pryor Creek and that bus is at capacity (72 Passengers)

Your proposed subdivision of 1214 single family residences will generate an additional 1457 to 1943 students for our school system, which will more than triple our present student population.

At present our Elementary building, shop and home economics, business rooms are operating at over capacity. We cannot absorb more students in those areas. It would be possible to absorb approximately 30 students in the High School and 30 in the Junior High, excluding shop, home economics, and business areas.

The board of trustees of School District #24 has gone on record in opposition to this subdivision for the following reasons.

1. This subdivision would increase our student population approximately 97-195 students per year for a 10 to 15 year period, which represents an increase of 13.5% to 27.1% per year. This would require from 4-8 additional classrooms per year for the period of development. On a separate attached sheet I have projected the impact costs on the School District of this project. As you can see from the sheets the total valuation of the District, after the subdivision is complete, will not be enough to build the needed facilities to provide for this subdivision.
2. Land for additional facilities in the Huntley area is not presently available and can be purchased only by a vote of the District patrons. Present local taxpayers will have to bear most of the burden for the early years of this development. Each 1 million dollar bond for facilities will increase taxes approximately 12.7%. 4.3 to 6 million dollars, at present costs, in additional facilities and land will be required to meet the needs of additional students which would increase taxes over 50% based on present District valuation. An agricultural community cannot afford a tax increase of this magnitude.
3. District costs for operation will increase with additional students, and raise local taxes.
4. The present District valuation is less than the amount needed for construction of additional facilities.
5. The School District faces a 1.6 million dollar project at the present time to accommodate present growth and assure that our District can meet state accreditation standards. The District has been turned down twice on a 1.3 million dollar bond issue for facilities including class rooms, shop, home economics, and business.

6. Our District will be severely handicapped in trying to meet state accreditation standards if this project is approved.
7. In addition to this subdivision, a number of other subdivisions are under study or have been approved which include 417 lots; namely Shadow Canyon, Buffalo Bluffs, Lewis and Clark, Trask, and Stout subdivisions.
8. An additional 11-14 buses would have to be operated out of Pryor Creek to accommodate one half of the students, an increase of 1100% to 1400%. I feel that a very thorough study should be made of the following:
 1. Timeline for development of subdivision and the amount this project will increase taxable valuation on a yearly basis.
 2. Impact on local taxpayers throughout the Project.
 3. Facilities needed to accommodate the impact on the Schools.
 4. Sites for future schools.
 5. Consider all subdivisions and trailer courts as a package.

Sincerely,



Calvin G. McRae
Superintendent

CGM/sb

LINK SUB-DIVISION

Impact on School District #24
10 Year Projected Development Period

Students	Additional Land Requirement	Additional Classrooms	Support Facilities	Cost 1 Yr. for Support of Facilities	Inflation Factor 10% a Yr.	Total 10 Yr. Cost of Impact Not including Interest or Operating Cost
1457	30 Acres	70,300 Sq. Ft.	20,000 Sq.	Ft. \$4,563,500	\$2,399,925	\$6,763,425
1943	40 Acres	93,750 Sq. Ft.	30,000 Sq.	Ft. \$5,968,750	\$3,282,813	\$9,251,563

Impact on School District #24
15 Year Projected Development Period

1457	30 Acres	70,300 Sq. Ft.	20,000 Sq.	Ft. \$4,363,500	\$3,054,450	\$7,417,950
1943	40 Acres	93,750 Sq. Ft.	30,000 Sq.	Ft. \$5,968,750	\$3,548,160	\$9,516,910

SOURCE: School District #24 figures accompanying Administrators letter

Land Use. The area proposed for subdividing is not covered by a comprehensive plan or land use regulation such as zoning. Annexation is not proposed. The nearby town of Huntley is not incorporated.

Public land nearby is a tract of land owned by the Bureau of Reclamation at the head of Huntley main canal extending downstream from the canal. This is the same land where the U.S.G.S. Madison formation test well is being drilled. This public land should have minimal impact from the subdivision, as it is across the Interstate 94 from the subdivision. That land is currently ground leased for agricultural purposes, and it will probably remain in the public domain.

Adjacent land uses are mixed between agricultural and residential. Agricultural interests are pursued to the east of the property on the east side of Pryor Creek, and to the immediate west. Surrounding this proposal on the south and a little further to the west is 3,000 acres of ten acre tracts subdivided in 1973. This is called Buffalo Bluffs and Shadow Canyon (C.S. 1363). As this master planned development progresses, it will have a definite effect on the ten acre tracts making them more desirable and valuable. They are somewhat sparsely populated now, possibly having no more than 100 occupied sites.

The immediately surrounding agricultural areas will also be impacted with the typical urban-agricultural conflict, which might include dogs harassing livestock, and complaints about agricultural practices such as crop dusting, fertilizing, plowing operations on windy days, etc. Also the agricultural interests will see pressure increase on their lands for housing purposes, and its value for that purpose will increase.

No hazards were noted within the subdivision such as high voltage power lines, potential subsidence, or dilapidated structures. Items that were noted include Pryor Creek itself, which could be considered a drowning hazard. However, no housing will be constructed in the immediate vicinity of the creek in consideration of flood potential, so this hazard will be minimized to a large degree.³³

No unpleasant odors are expected in this area as no feedlots or other similar agricultural uses are nearby. This area is generally downwind from the two Billings refineries, however, the general distance (7-9 miles) should disperse pollutants.³⁴

Housing. The total number of residential dwellings within the master planned area will be 962 residential homes, 264 mobile homes.

This will not be a recreational home subdivision, but rather a primary homesite area. The developer will maintain a very strict quality within the subdivision by means of strict covenants and review committees.

It is estimated that the subdivision would be half completed in 5 to 6 years from the onset of the initial building program and about 10-12 years from initiation to completion.³⁵

Parks and Recreational Facilities. Two parks will be provided, one will be within the boundaries of the proposed subdivision, the other will be one-quarter mile south of the subdivision. Gross park acreage is about 42 acres.

Recreational opportunities that will serve the area include the two proposed golf courses, the Pryor Creek, the Yellowstone River and the community parks in the Huntley area.

A location map of the proposed park sites is included in the assessment.

Effects on Taxation. The entire tract is listed as agricultural land at this time. Current taxes are about \$500. After reclassification as agricultural land, each standard house tract could have a tax revenue of \$150 to \$200, for a total of \$144,000 to \$193,000.

In addition, a current estimate by the tax appraiser of the taxes on a 36-hole golf course, convention center, and clubhouse at a cost of 5 million dollars and the current 167.11 mill tax rate for School District #24 would be about \$70,000 per year. These facilities would be built in the initial stages of the total development. In addition, at the end of the total development, each standard home owner would pay \$500 - \$700 taxes (1978 rate) on the improvements on the lot, for a total of \$481,000 to \$673,000.

Additional revenue from 264 mobile home units at \$85 per unit would be \$22,000 per year. Taxes on the mobile home court would be about \$9,000. Additional taxes have not been estimated for 3 commercial areas set aside within the subdivision, nor for proposed condominiums.

ESTIMATED TAXES
(1978 dollars and rates)

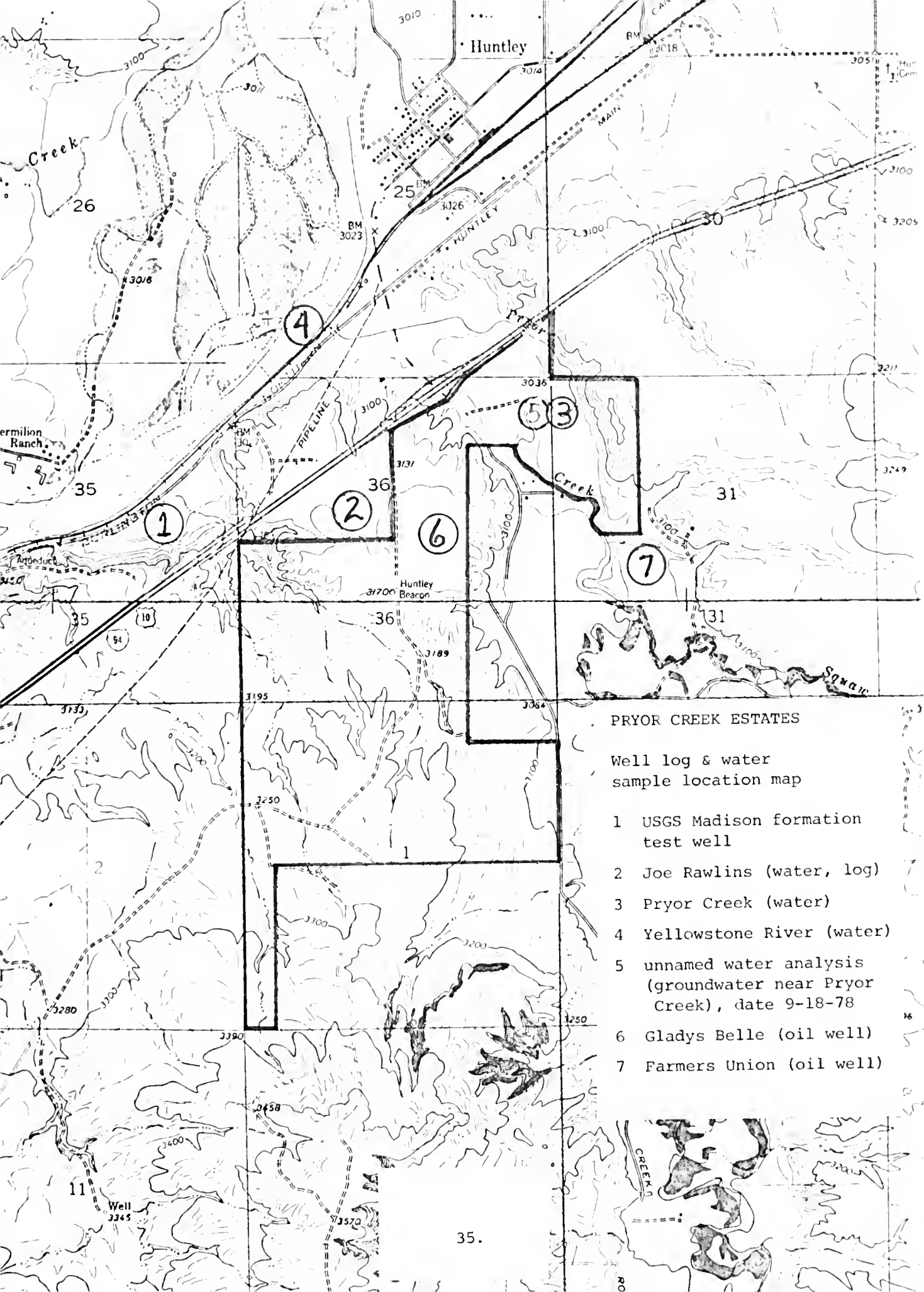
	<u>LOW</u>	<u>AVERAGE</u>	<u>HIGH</u>
Golf Course) Convention Center) Clubhouse)		\$70,000	
962 Standard House Lots @ \$150 - \$200	\$144,000		\$193,000
962 Homes @ \$500 - \$700	481,000		673,000
264 Mobile Homes @ \$85		22,000	
Mobile Home Court		9,000	

TOTAL ESTIMATED TAX REVENUE INCREASE

	<u>1978 Dollars</u>	<u>10 Years 7% Inflation</u>	<u>10 Years 10% Inflation</u>
Low to Average	\$726,000	\$1,428,000	\$1,883,000
Average to High	967,000 ³⁶	1,902,000	2,508,000

Water and sewer will be financed by a Rural Special Improvement District (RSID). Additionally, monthly water and sewer assessments will be levied against all property within the subdivision for the maintenance, operation, and services of the water and sewer.

Effects on Wildlife, Wildlife Habitat and Areas of Rare, Endangered or Unique Plant Species. There is no known critical wildlife area, nor wetlands, nor rare, endangered, or unique plant species known to exist within the boundaries of this subdivision. (For wildlife present, see section 5 under ENVIRONMENT...).



PRYOR CREEK ESTATES

Well log & water sample location map

- 1 USGS Madison formation test well
- 2 Joe Rawlins (water, log)
- 3 Pryor Creek (water)
- 4 Yellowstone River (water)
- 5 unnamed water analysis (groundwater near Pryor Creek), date 9-18-78
- 6 Gladys Belle (oil well)
- 7 Farmers Union (oil well)

STATE OF MONTANA
Department of Natural Resources and Conservation

WHITE — DEPARTMENT
PINK — BUREAU
CANARY — WELL OWNER
GOLDENROD — DRILLER

WELL LOG REPORT

State law requires that this form be filed by the water well driller on any water well completed by him on and after July 1, 1973 within sixty (60) days after completion of the well.

WELL OWNER: Name JOE RAWLINS Address SECURITIES BUILDING ^{BILLINGS} _{Mont}

WELL LOCATION: County YELLOWSTONE; C&S ^{NE 1/4}, Sec 36, Twp. 2 ^N 27 ^E W

PROPOSED USE: Domestic Stock Municipal Industrial Lawn and Garden
 Irrigation Other (if other, specify) _____

METHOD DRILLED: Cable Bored
 Forward Rotary Reverse Rotary
 Jetted Other (if other, specify) _____

8. WELL LOG:
Depth (ft.)
From To Formation

WELL CONSTRUCTION: 39
Diameter of hole 9-6 inches. Depth 165 ft.
Casing: Steel Plastic Concrete
 Threaded Welded Other (if other, specify) _____

0	5	TOP SOIL
5	33	GRAVEL
33	115	SHALE W/ SAND STRINGS
115	150	COARSE SANDSTONE
150	165	DARK SHALE

Pipe Weight: Dia.: From: To:
3.0 lb/ft. 7 inches 1+ feet 39 feet
11.0 lb/ft. 4 1/2 inches 5 feet 165 feet
____ lb/ft. _____ inches _____ feet _____ feet
Was perforated pipe used? Yes No
Length of pipe perforated 60 feet
Was casing left open end? Yes No
Was a well screen installed? Yes No
Material _____ Dia. _____ inches
(stainless steel, bronze, etc.)

" " " "
JUDITH RIVER
FORMATION

Perforation type: slots holes
Size 1/4 set from 105 feet to 165 feet
Size _____ set from _____ feet to _____ feet
Size _____ set from _____ feet to _____ feet
Was a packer or seal used? Yes No
If so, what material _____

(Use separate sheet if necessary)

Well type: Straight screen Graveled
Was the well grouted? Yes No
To what depth? 20 feet

9. DATE STARTED: 12-30-76

Material used in grouting BENTONITE
Well head completion: Pitless adapter
12" above grade Other _____
(If other, specify) _____

10. DATE COMPLETED: 2-8-77

Was the well disinfected? Yes No

11. WAS WELL PLUGGED OR ABANDONED? Yes No
If so, how _____

WATER LEVEL:
Static water level 85 ft. below land surface
If flowing: closed-in pressure _____ psi
GPM flow _____ through _____
Controlled by: Valve _____
 Other, specify _____

12. DRILLER'S CERTIFICATION:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge.
DIGGER DRILL 197
Driller's or Firm Name License No.

WELL TEST DATA: Pump Bailer
(If other, specify) _____

BILLINGS MONT.
Address

Pumping level below land surface:
11.0 ft. after 1/2 hrs. pumping 15 gpm
16.0 ft. after 1 1/2 hrs. pumping 5 gpm

J.L.B. 2-9-77
Signed by Date

LABORATORY REPORT

Lab. No. 13396-2

To Joe Rawlins Date 2-9-77

Address 310 Securities Building Billings, Montana

WATER ANALYSIS

Submitted 2-8-77

CONSTITUENTS

PARTS PER MILLION

SODIUM	529
CALCIUM	4
MAGNESIUM	6
SULFATE	99
CHLORIDE	148
CARBONATE	72
BICARBONATE	921
TOTAL SOLIDS	1,312

TOTAL HARDNESS AS CaCO₃ 2 GRAINS PER US GALLON

RESISTIVITY @ 68°F 5.0 OHMS PER METER CUBED

pH 8.4

REMARKS: Soft water. Mineraally suitable for domestic use and drinking.

ENERGY & ENVIRONMENTAL
RESOURCE CONSULTANTS, INC.

(Formerly YAPUNCICH, SANDERSON & BROWN LABS)

Phone (406) 252-6325 ■ 13 North 32nd Street
 P.O. Box 593 ■ Billings, Montana 59103

To Elmer Link Lab. No. 14612-3
 Date 9-25-78
 Address 2201 Fairway Drive Billings, Montana 59101

WATER ANALYSIS REPORT

Pryor Creek 1000' So. of I-94
 Sampled 9-23-78

<u>CONSTITUENTS</u>	<u>MILLIGRAMS PER LITER</u>
---------------------	-----------------------------

Sodium.....	124
Calcium	68
Magnesium	38
Sulfate	366
Chloride	22
Carbonate	0
Bicarbonate	220

Total Solids (Calculated)	726
---------------------------	-----

Total Hardness $A^{-} CaCO_3$	326
-------------------------------	-----

Specific Conductance @ 25° C 1260 Micromhos/cm

pH 8.0

***Remarks:** Very hard water. Minerally suitable for domestic use and drinking. Sulfate and total solids slightly higher than maximums recommended by U.S.P.H.S. for public water supplies.

*The suitability of this water for drinking and/or other use is an interpretation based entirely upon the concentration of the constituents reported above. This analysis does not establish the presence or absence of other minor constituents, not reported above, which may effect the suitability of this water for drinking and/or other use

ENERGY & ENVIRONMENTAL
RESOURCE CONSULTANTS, INC.

(Formerly YAPUNCICH, SANDERSON & BROWN LABS)

Phone (406) 252-6325 ■ 13 North 32nd Street
P.O. Box 593 ■ Billings, Montana 59103

To Elmer Link Date 9-25-78 Lab. No. 14612-2
Address 2201 Fairway Drive Billings, Montana 59102

WATER ANALYSIS REPORT

Yellowstone River Water
Sampled 9-23-78 Above Pryor Creek Bridge

CONSTITUENTS

MILLIGRAMS PER LITER

Sodium.....	35
Calcium	39
Magnesium	13
Sulfate	87
Chloride	15
Carbonate	0
Bicarbonate	146

Total Solids (Calculated) 261

Total Hardness As CaCO₃ 149

Specific Conductance @ 25° C 1120 Micromhos/cm

pH 7.8

***Remarks:** Moderately hard water. Minerally suitable
for domestic use and drinking.

*The suitability of this water for drinking and/or other use is an interpretation based entirely upon the concentration of the constituents reported above. This analysis does not establish the presence or absence of other minor constituents, not reported above, which may effect the suitability of this water for drinking and/or other use.

Lab. No. 14612

To Elmer Link Date 9-21-78

Address 2201 Fairway Drive Billings, Montana 59102

WATER ANALYSIS REPORT

Sample Submitted 9-18-78

<u>CONSTITUENTS</u>	<u>MILLIGRAMS PER LITER</u>
Potassium.....	5
Sodium.....	242
Calcium	126
Magnesium	81
Sulfate	770
Chloride	43
Carbonate	0
Bicarbonate	403
 Total Solids (Calculated)	 1,470
Total Hardness As CaCO ₃	647

Specific Conductance @ 25° C 1800 Micromhos/cm
 pH 7.8

***Remarks:** Very hard water. Can be used for domestic use and drinking. Sulfate and total solids exceed maximums recommended by U.S.P.H.S. for public water supplies.

*The suitability of this water for drinking and/or other use is an interpretation based entirely upon the concentration of the constituents reported above. This analysis does not establish the presence or absence of other minor constituents, not reported above, which may effect the suitability of this water for drinking and/or other use.

LOG OF GLADYS BELLE OIL COMPANY LINK #1

YELLOWSTONE COUNTY

Location: NE Corner SW 1/4 of NE 1/4 Section 36, T. 2N, R. 27 E.

	Thickness	Depth
Gravel.....	50.....	50
Lime, light.....	5.....	55
Sand, light, water.....	15.....	70
Shale, dark.....	30.....	100
Sand, Light, Big water.....	45.....	145
Shale, Light.....	16.....	161
Sand, Water, Light.....	10.....	171
Shale, Light.....	20.....	191
Sandy Shale, Top. Colo., Brown.....	79.....	270
Shale.....	230.....	500
Shale.....	35.....	535
Shale.....	765.....	1300
Slate Shale.....	375.....	1675
Shale.....	25.....	1700
Slate.....	25.....	1725
Shale (Oil).....	50.....	1775
Slate.....	25.....	1800
Sandy Shale Light.....	70.....	1870
Sand (Medium) Brown.....	70.....	1940
Lime Shell Silicious.....	5.....	1945
Slate.....	10.....	1955
Lime Shell Silicious.....	5.....	1960
Shale.....	30.....	1990
Sand - Brown (Medium).....	20.....	2035
Shale.....	60.....	2095
Limeshell - Silicious, Dark.....	9.....	2104
Slate.....	30.....	2134
Shale.....	80.....	2214
Slate & Shale.....	111.....	2325
Slate & Shale Brown, soft and oavy.....	30.....	2355
Lime Shells & Slate.....	150.....	2505
Brown Shale.....	125.....	2630
Red Shale.....	20.....	2650
Blue Shale.....	75.....	2625
Black Shale.....	125.....	2950
Lime Shells.....	45.....	2995
Red Beds.....	40.....	3035
Sand.....	Dry..	

WATER-100'-145'

(2)



GEOLOGIC REPORT

Farmers Union Central Exchange, Inc.

Wells No. 1

SE $\frac{1}{4}$, NW $\frac{1}{4}$, Sec. 31, T 2 N, R 28 E

Yellowstone County, Montana

Huntley Structure

Elevation - 3156

Surface formation: Eagle sandstone

Lowest formation tested: Amsden

Total Depth: 4052 feet

*Wells
Proposed
Amsden
1945-46*

Formation Tops

Colorado shale: 470 (?) Feet

Frontier (?): 1850 Feet

Dakota sandstone: 2745 feet

Kootenai: 2799 feet

Lakota: 2988 feet

Morrison: 3025 feet

Ellis: 3240 feet

Chugwater: 3738 (?) feet

Embar: 3852 feet

Tensleep(?): 3932 feet

Amsden: 3936(?) feet

Detailed Lithologic Description

0 - 70 Surface gravel.

Eagle sandstone

70 - 80 Sandstone, soft, friable, medium-grained, poorly sorted, angular to rounded, pink, green, black grains, very f

80 - 90 Gravel (caving 42.

90 - 100 Siltstone, sandy, conitic, gray.

100 - 160 Sandstone, medium-fine-grained, gray-white,



LIST OF WATER RIGHT HOLDERS -- PRYOR CREEK

J. M. Robinson	2	20 cu. ft.	July 1906
Th S. Hogan	2	25 " "	July 20, 1906
Clyde DurLand-Witte	3	600 inches	Dec. 1906
Cyrus Kipp	4	6 cu. ft.	Feb. 1907
Irvin Clark	5	25 cu. ft.	Aug. 1907
C. W. Kipp	6	24 Cu. in.	Oct. 1907
G. Reynolds, Agent	7	3490 cu. in.	Feb. 1908
J. Kipp	8	500 Cu. in.	May 1908
A. Upshaw	9	97 in.	Nov. 1908
C. Durland	10	400 in.	December 1908
C. Reilly & F.X.N. Rockmaker	11	25 Cu. Ft.	December 1908
Ed Rochette	12	10 Cu. Ft.	February 1909
E. Reilly, Rockmaker	13	25 Cu. Ft.	April 1909
A. Upshaw	14	5 Cu. Ft.	June 1909
Mary Connelly	15	5 Cu. Ft.	June 1909
Louis Roads	16	5 Cu. Ft.	June 1909
John Hoyt	17	120 in.	Feb. 1910
D. Henry	18	5 Cu. Ft.	March 1910
Joe Hooper	19	14 Cu. Ft.	August 1910
East Fork			
United States	20	100 Cu. Ft.	June 1911
Ed Rochette	21	10 in.	March 1912
Pryor Land & D. Co.	22	1200 in.	April 1912
C. H. Asbury	23	17 Ft.	April 1920
Dryhead Ranch Co.	24	15 Ft.	May 1930
John L. McCannon	25	2 $\frac{1}{2}$ Ft.	April 1931
George Derden	26	2 $\frac{1}{2}$ Ft.	April 1931
Norman Loueder	27	100 cu. Ft.	April 1930
Ben Streets	28	50 Cu. Ft.	September 1948

SOURCE: E. F. Link

WATER RIGHTS

Original owner	Present Owner	Legal Description	Bk. Letter	Page #
J.M. Robinson	Sam Mahan W.A. Mac Clain G.J. Cook J.R. Sweihart Florence Bradstreet Ed. Seiwart	Sec. 6, 7, 18 & 19- 1TN-R 28E (Indian Land)	E	307
Thomas Hogan	E.E. Milam	NW $\frac{1}{4}$ -NE $\frac{1}{4}$ -30 W $\frac{1}{2}$ SE $\frac{1}{4}$ & SW $\frac{1}{4}$ of NE $\frac{1}{4}$ 19 T1-R 28E	E	321
Clyde Durland & C.C. Witte	E.E. Milam	E $\frac{1}{2}$ -19-E $\frac{1}{2}$ of W $\frac{1}{2}$ -30 Sec. 19 & 30-T1N R 28E	E	410
Cyrus W. Kipp	Indian Land	NW $\frac{1}{4}$ & $\frac{1}{2}$ NW $\frac{1}{4}$ -19 R28E	E	430
Irvin G. Clark	Ed. Siewart	Lot 4 Sec. 19, Lots 1 & 2 Sec. 30 T1NR28E	E	547
C.W. Kipp	Indian Land	NW $\frac{1}{4}$ - $\frac{1}{2}$ NW $\frac{1}{4}$ -19 R28E	E	592
S.G. Reynolds, Agent	?	?	E	46
James E. Kipp	?	?	E	287
Alex. Upshaw	Clem & Joe Cormier	29 & 30 T3S-R27E SE $\frac{1}{4}$ -NE $\frac{1}{4}$ -NE $\frac{1}{4}$ -30T3 R27E	F	221
Clyde Durland	E.E. Milam	See Above	F	245
E. Reilley & F.X.N. Rademaker	John & Joseph Herren	NE $\frac{1}{4}$ -8-S $\frac{1}{2}$ -5-T1S R28E	F	247
Ed. Rochette	J.G. Link et al-	Lot 1 & 2-31-2N- 28E-N $\frac{1}{2}$ -NE $\frac{1}{4}$ -36-2N- 27E	F	247
Mary T. Connelly	Alex Deines	s $\frac{1}{2}$ -S $\frac{1}{2}$ -21-NW $\frac{1}{4}$ R28 T2S-R27E	FMis.	349
Louis Roads	Alex Deines	SW $\frac{1}{4}$ -SE $\frac{1}{4}$ -28T2S R27E	FMis.	347
John Hoyt	?	35 & 36-T1SR27E	FMis.	474
D.C. Hervey	?	NW $\frac{1}{4}$ -SW $\frac{1}{4}$ -33-T2S R27E	FMis.	502

Project Telephone Company, Inc.



Serving Ballantine, Huntley, Nibbe, Osborne, Pompeys Pillar,
Worden and Adjacent Areas

WORDEN, MONTANA 59088

October 19, 1978

Mr. Jerry Cormier
Economics West
P. O. Box 437
Billings, Mt. 59103

Dear Jerry:

We serve the area of your proposed subdivision on Pryor Creek at the Huntley interchange of I-94.

We can provide complete underground, one-party service for this area.

We would appreciate being kept informed of your projects progress.

Sincerely,

Walt L. Pierce
Manager

POPULATION

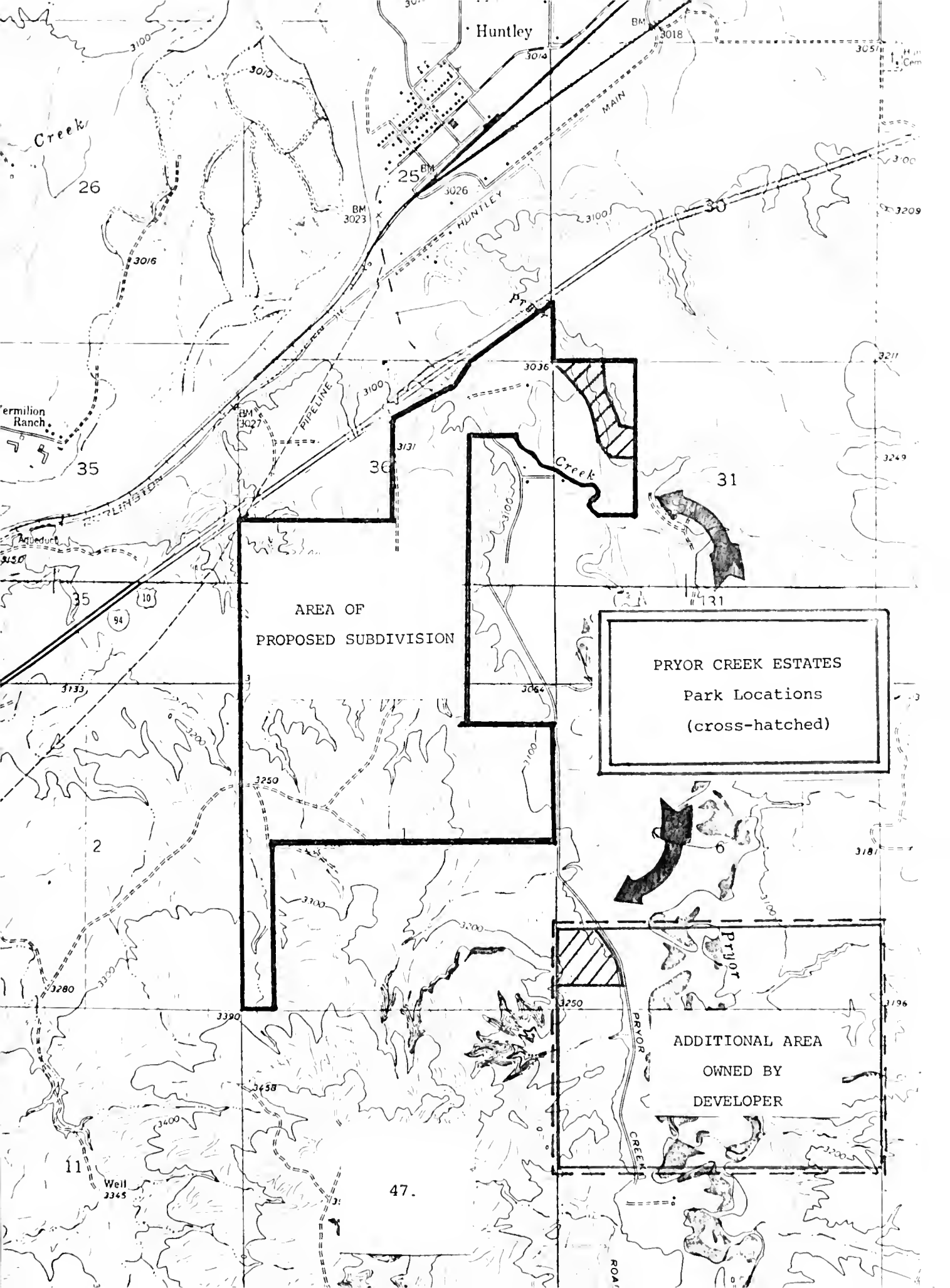
	<u>1950¹</u>	<u>1960¹</u>	<u>1970³</u>	<u>Jan. 4 1978</u>	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>2000</u>
YELLOWSTONE COUNTY	55,875	79,016	87,367	105,500	111,800	126,800	142,500	176,400
BILLINGS	31,834	52,851	61,581	76,600	80,100	91,800	104,300	131,900
BILLINGS HEIGHTS	-----	-----	5,482	6,809 (1977)	12,805	-----	-----	33,265
LOCKMOUND	-----	-----	1,631	3,153 (1977)	3,994	-----	-----	10,814
TRANSPORTATION STUDY AREA (Technical Memorandum #4)	-----	60,877 ²	72,900	92,700	96,500	111,600	127,900	164,700
LAUREL	3,663	4,601	4,454	5,945 (for 1975)	7,968	10,696	14,347	25,444

PERCENT OF CHANGES

	1950-1960	1960-1970	1970-1977	1950-1977	1960-1977
YELLOWSTONE COUNTY	41.4	10.5	20.7	88.8	33.5
BILLINGS	66.0	16.5	24.3	140.6	44.9
TRANSPORTATION STUDY AREA/URBAN AREA	-----	19.7	27.1	-----	52.2

SOURCES:

1. Population of SMSA, Table II, U. S. Census of Population: Number of Inhabitants, 1960
2. Occupancy Characteristics for SMSA's.....
Table 15, U. S. Census of Housing; State & Small Areas, 1960 (figure for population in housing units)
3. Supplementary Report: Race of the Population, U. S. Bureau of the Census, 1970
4. City-County Staff Estimates



Huntley

Creek

MAIN

HUNTLEY

Creek

PRYOR
CREEK

AREA OF
PROPOSED SUBDIVISION

PRYOR CREEK ESTATES
Park Locations
(cross-hatched)

ADDITIONAL AREA
OWNED BY
DEVELOPER

3100

3070

3074

BM 3018

3057

3000

3209

26

3076

25 BM

3026

BM 3023

3211

ermilion
Ranch

35

30

31

3249

Arqueduct

35

94

3131

3036

3100

3211

3249

AREA OF
PROPOSED SUBDIVISION

PRYOR CREEK ESTATES
Park Locations
(cross-hatched)

ADDITIONAL AREA
OWNED BY
DEVELOPER

3133

3064

2

3250

3064

3181

3100

3064



3280

3300

3064

3181

3390

3250

3196

3100

3250

11

Well
3345

47

ROAD

3400

3458

3300

ROAD

FOOTNOTES

1. U.S.G.S. records; Water Resources Division, Billings
2. Dennis Schroeder, P.E., Assistant Regional Supervisor of Water and Land, Bureau of Reclamation, Billings office; interview October, 1978
3. Elmer Link, owner-developer, various interviews October, 1978
4. Photographs in County Commissioners Office, Billings, Montana
5. Pryor Creek Watershed Investigation Report, U.S.D.A., Soil Conservation Service, December 1974
6. Joe Rawlins, Consultant Geologist; interview October 20, 1978
7. Roger Miller, Hydrologist, U.S.G.S. Water Resources Division, Billings, Montana; conversation October 23, 1978
8. Climax Vegetation of Montana, U.S.D.A. Soil Conservation Service; report, September 1976
9. Elmer Link, op. cit.
10. Roger Fliger, Regional Supervisor, Montana Fish and Game Department; interview; October 20, 1978
11. Elmer Link, op. cit.
12. Ibid
13. JoAnn Haas, City County planning office; interview; October 26, 1978
14. National Golf Foundation, unpublished feasibility report on Billings Market Area, July 1978
15. Montana Highway Department Figures
16. Elmer Link, op. cit.
17. Harry Schmitt, P.E., Sanderson, Stewart, Mueller Consulting Engineers
18. Preamble to "Process design manual for Land Treatment of Municipal Wastewater"; published by United States Environmental Protection Agency, Ernest Graves, Major Général, United States Army, Deputy Chief of Engineers, October 1977
19. Jim Worthington, HKM Associates, Billings, Montana; interview; October 1978
20. Willis Wetstein, Vice President and Chief of Operations, Morrison-Mairle Consulting Engineers, Helena, Montana; interview; October 24, 1978
21. Harry Schmitt, op. cit.
22. D & F Sanitation, conversation; October 9, 1978
23. Roy Bennet, Superintendent, City of Billings Landfill; interview; October 20, 1978
24. Tom Astle, R.L.S., Project Surveyor, various interviews; October 1978
25. Montana Highway Department, op. cit.
26. Norm Gutcher, P.E. HKM Associates; conversation; October 20, 1978



27. Walt Pierce, Manager, Project Telephone Company; interview; October 13, 1978
28. Howard Zahller, Manager, Yellowstone Valley Electric Cooperative; interview; October 16, 1978
29. Jim Van Sickle, Worden Fire Department; interview; October 13, 1978
30. Doug O'Donnell, O'Donnell Fire Service; conversation; October 23, 1978
31. Calvin McRae, Superintendent of Worden Schools; interview; October 13, 1978
32. Elmer Link, op. cit.
33. On-site inspections, Jerry Cormier, October 1978
34. Steve Duganz, Director of Air Pollution, Billings, Montana; interview; October 18, 1978
35. Elmer Link, op. cit.
36. Jim Babb, Yellowstone County Appraisal Office; interview; October 19, 1978

APPLICATION
FOR
PRELIMINARY PLAT APPROVAL

1. Name of Subdivision Pryor Creek Estates (a Subdivision)
2. Location: Sec. 25 & 36 T.2N, R.27E, Sec. 31 T.2N R.28E Sec. 1, T.1N R 27 E
 - a. Legal Description: 1/4 Section Section
Township Range
 - b. General Location South of I 94 west of the Pryor Creek Road
3. Name, Address and Telephone Number of Subdivider:
 - a. Name Elmer F. Link
 - b. Address 2201 Fairway Dr.
 - c. Telephone 248-8306
4. Name, Address and Telephone Number of Owner (If other than subdivider).
 - a. Name
 - b. Address
 - c. Telephone
5. Description Data:
 - a. Gross Area of Subdivision In Acres 476+- Acres
 - b. Number of Lots 965 + (264 Trailer spaces)
 - c. Minimum and Maximum Lot Size 10,000 to 12,000 sq. ft. to 7.5+- Acres
 - d. Lineal Feet of Streets 68680+-
 - e. Existing Land Use Unsued sagebrush hills
 - f. Existing Zoning None
 - g. Intended Use or Purpose (Briefly explain) To develop home sites
6. Park Requirement Payment
 - a. Land 42+- Acres
 - b. Cash Dollars (Check Preference of owner)
7. Variances Requested From Terms of the Subdivision Regulations:
 - a. Allow access to the Arterial Streets to Lot 10 Block 4, Lot 17 Block 5 and to
 - b. Lots 4 thru 13 Block 19
 - c. Varance in the location of Arterial Streets from section lines
 - d.
8. List of Materials Submitted With This Application:

a. <u>30 copys of the plat</u>	e. <u>30 copys of the E.I.A.</u>
b. <u>30 copys of the application</u>	f. <u>\$75.00</u>
c. <u>30 copys of the Sub. Agreement</u>	g. <u> </u>
d. <u>30 copys of the Waiver</u>	h. <u> </u>
9. Name, Address and Telephone Number of Each Person or Firm Providing Professional Services and Information to the Subdivider:
 - a. Land Surveyor or Engineer Thomas Astle Jr. RLS

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FOR
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a. 30 copys of the plat e. 30 copys of the E.I.A.
b. 30 copys of the application f. 375.00
c. 30 copys of the Sub. Agreement g.
d. 30 copys of the Waiver h.
9. Name, Address and Telephone Number of Each Person or Firm Providing Professional Services and Information to the Subdivider:
a. Land Surveyor or Engineer Thomas Astle Jr. RLS
111 Burlington Ave.
Billings, Montana 59101
b. Attorney

c. Other Economics West
3203 3rd. Ave. N.
Billings, Montana 59101 Ph. 2596115

I declare that I am the owner of record and have examined all statements and information contained herein, and all attached exhibits and to the best of my knowledge and belief, it is true and correct.

Owner or Owners: Elmer F. Link

(Signature of owner or owners)

Equal number of copies of this application shall be submitted as the type of plat to be submitted.

SUBDIVISION IMPROVEMENTS AGREEMENT

THIS AGREEMENT, made and entered into this ____ day of _____ 19 ___. by and between _____ and _____ hereinafter referred to as "Subdivider" and the County of Yellowstone hereinafter referred to as "County".

WITNESSETH

THAT WHEREAS, a preliminary plat of an area known as Pryor Creek Estates (A Subdivision) _____ filing, was submitted to the City County Planning Board on _____ 19 ___, and further recommended it's approval to the Board of County Commissioners subject to certain recommendations, and

WHEREAS, at a regular meeting held on the ____ day of _____ 19 ___, the County Commissioners approved, subject to certain recommendations of the Planning Board and the County Commissioners, a preliminary plat of Pryor Creek Estates (A Subdivision) _____ filing and.

WHEREAS, a Subdivision Improvements Agreement is required between the County and the Subdivider prior to the approval of the final plat by the City County Planning Board.

NOW THEREFORE, the parties to this agreement for and in consideration of the mutual promises herein contained and for other good and valuable considerations do hereby agree as follows.

1. Subdivider agrees to provide all improvements required by the County. Said improvements include curb & gutter paving survey monuments street name signs stop signs traffic control signs water lines sanitary sewer lines and storm water drainage control. Such improvements are to be in conformance with the County of Yellowstone specifications and the approval of the State of Montana Health Department. Said improvements to be done by Private Contract or by way of a Rural Special Improvements District or Districts.
2. Subdivider agrees to execute a Private Contract or to have created within 6 months from the filing of the final plat with the County clerk and recorder Rural Special Improvement District or Districts required to install the improvements for the phases being developed.
3. Temporary cul-de-sacs will be installed where needed between phases.
4. Subdivider agrees on all work done by other than Rural Special Improvement District the Subdivider is to be responsible for the care and maintenance of all improvements until their completion and final acceptance by the County of Yellowstone, including the fact that the construction site shall be kept free and clear of all unsightly accumulation of rubbish and debris, and the public shall be protected by the use and maintenance of sufficient and proper barricades, lights, and related construction items, as specified in the manual of uniform traffic control devices, during the course of construction.
5. On all work done by Rural Special Improvement Districts or Private Contracts, the Subdivider agrees to guarantee all improvements for a period of one (1) year from the date of final acceptance of the work by the County of Yellowstone.
6. Street Improvements, all streets within the subdivision with the exception of Pryor Creek Road 20th Street South and a section of Yellowstone Trail will be built to County specifications, the design section will be submitted to and approved by the County Surveyor. Pryor Creek Road is presently constructed to County specifications. No additional improvements are anticipated at this time, the subdivider agrees to participate in any future Improvements. Yellowstone Trail is presently a gravel trail maintained by the County, the proposed re-route will have a section from Pryor Creek road to $\frac{1}{4}$ mile west with only $\frac{1}{2}$ right-of-way (50ft.), this section will only be constructed as a gravel road until the additional right-of-way is obtained the property owner adjacent to this section of road will participate in the cost of construction of the full road when the completion of the road is undertaken. Also the Subdivider agrees that when construction of the Golf Course closes this road a temporary gravel road will be constructed along the proposed new right-of-way

20th Street South will have a 40ft. 1/2 right-of-way contiguous to Tract 298 of Certificate of Survey No. 1363 which is a gravel road but not constructed to county specifications. The subdivider agrees to participate in the cost of construction of this road when a agreement with the private road owner is reached.

There will be no vehicle access across the no access strip, Access across the controlled access strip will need to be approved by the County Surveyor. Lots with Access to arterial streets will have loop driveways

Storm Drainage will be along paved streets with conc. curb & gutter, and drainage ways. The runoff will be collected in the lower lake on the golf course and storm inlets with boulder pits.

Street name signs of standard construction as required by the County will be placed in appropriate locations.

- 7. Utilities water line and the water collection system will be installed to the State of Montana Health departments specifications. Sanitary Sewer lines and the sewage disposal will be installed to the State of Montana Health Departments specifications.
- 8. Survey Monuments will be installed as required by the Yellowstone County Subdivision Regulations.
- 9. Subdivider agrees to provide for any necessary adjustment or alteration to existing improvements caused due to installation of required improvements without cost to the County.
- 10. There is attached hereto a Waiver concerning the right to protest the creation of Rural Special Improvement Districts, which by this reference is expressly incorporated herein and made as much a part hereof as though fully and completely set forth herein at this point.
- 11. Subdivider agrees to notify the County Surveyor of the date and the hour construction is anticipated to begin on the required improvements and to keep the County Surveyor informed of the progress of construction; if construction is stopped for any other reason than overnight, holidays, and weekends, the Subdivider agrees to notify the County Surveyor not less than four (4) hours before construction is scheduled to resume.

IN WITNESS WHEREOF, THE PARTIES HERETO SET THEIR HANDS AND OFFICIAL SEAL ON THE DATE FIRST ABOVE WRITTEN.

STATE OF MONTANA)
County of Yellowstone)

ss.

On this ____ day of _____ 19 ____. before me a Notary Public in and for the State of Montana personally appeared _____ and _____ known to me to be the persons who signed the foregoing instrument and who acknowledged to me that they executed the same, Witness my hand and seal the day and year herein above written

Notary Public in and for the State of Montana
Residing at _____
My commission expires _____

"COUNTY"

COMMISSIONER

COMMISSIONER

COMMISSIONER

ATTEST; CLERK AND RECORDER

W A I V E R

FOR A VALUABLE CONSIDERATION, the undersigned, owner of the hereinafter described real property, dose hereby waive the right to protest the formation of one or more Rural Special Improvement or Special Improvement District or Districts for the construction of streets, curbs, gutter, sidewalks, driveways, survey monuments, street name signs, street lights stop signs, water mains sanitary sewer mains and storm sewer lines either within or without the area to provide drainage for run-off water from the real property hereinafter described, and other incidental improvements which the County of Yellowstone may require.

This waiver and agreement shall run with the land and shall be binding upon the undersigned, its successors, and assigns, and the same shall be recorded in the office of the County Clerk and Recorder of Yellowstone County, Montana.

The real property hereinabove mentioned is more particularly described as follows, to-wit: PRYOR CREEK ESTATES (A SUBDIVISION)

Signed and dated this _____ day of _____ 19__.

"SUBDIVIDER"

STATE OF _____)
County of _____)ss

On this _____ day of _____ 19__ before me a Notary Public in and for the State of _____, personally appeared _____ and _____ known to me to be the persons who signed the foregoing instrument and who acknowledged to me that they executed the same. Witness my hand and seal the day and year herein above written

Notary Public in and for the State of _____
Residing at _____
My Commission expires _____

"COUNTY"

COMMISSIONER

COMMISSIONER

COMMISSIONER

ATTEST: CLERK AND RECORDER

Date: November 8, 1978

STATE AGENCY SUBDIVISION REVIEW

TO: Edward W. Casne, Health Department
Natural Resources
Erace Hayden, State Lands
Hydrology Division, Mont. Bureau of Mines & Geology, Butte
James Posewitz, Fish and Game
Homer Wheeler, Highway Department

FROM: Local Planning Services Bureau
CDA/Division of Planning
Capitol P.O.
Helena, Montana 59601

SUBDIVISION NAME: Pryor Creek Estates Subdivision

County: Yellowstone Nearest Town: Billings

Public Hearing Date: November 27, 1978

COMMENTS DUE ON: November 22, 1978

Please send your comments to: John Ewing, Planner, Billings-Yellowstone
City-County Planning Board, P.O. Box 1178, Billings, MT 59103

and one copy to the Division of Planning.

Additional Remarks: _____

CONCLUSIONS

All roads in the area will receive some impact. Most heavily impacted will be the Pryor Creek Road south of the Interstate for a distance of about 1.6 miles. This road will be raised to about 83% of functional capacity at full development, and during peak hours may exceed short term capacitys.

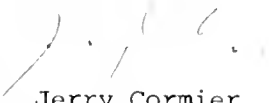
Additional impacts may be expected in the Billings area. However, all Interstate routes would remain at under 50% of capacity. Determining traffic destinations once at Billings 10 years from full development would be difficult to predict, to say the least, although impacts can be expected at current existing bottlenecks, such as the U.S. 87 bridge over the Yellowstone River, and the intersection at the Fairgrounds (Exposition Drive, 1st Ave. North, and U.S. 87).

Impacts in these areas may be lessened with additional river crossings and interchanges proposed and committed. The "Billings Area Transportation Study" (March, 1978, City-County Planning) lists an additional bridge crossing over the Yellowstone River to connect Bench Boulevard-Hilltop Road to the Lockwood Interchange on I-94. The same study indicates a full diamond interchange at Johnson Lane on I-94, and another bridge to tie in Johnson Lane with Billings Heights.

The above mentioned items may be constructed before PRYOR CREEK ESTATES is fully developed, which should lessen the impact of this subdivision on the section of U.S. 87 from I-94 to the Fairgrounds.

In discussions with the City of Billings Traffic Engineer, it was pointed out that the current alignment of the intersection of the Yellowstone Trail and the Pryor Creek Road could be a hazardous intersection. This danger has been eliminated to a large extent by changing the alignment of the arterial within the subdivision (Yellowstone Trail) to a point south of the existing intersection.

Respectfully submitted,


Jerry Cormier
Consultant

ACCESSIBILITY STUDY

for
PRYOR CREEK ESTATES

ESTIMATED NUMBER OF VEHICLE TRIPS GENERATED (per day):

1226 residential homesites x 7 trips	=	8582
34,000 rounds/golf/yr - 270 days	=	250
Commercial trips @30/ac x 30 ac.	=	900
Convention center (daily average)	=	250
		<hr/>
TOTAL		9982 (use 10,000)

EXISTING CONDITIONS

Interstate 90 and 94 (estimated capacity 25,000) 1977 ADT	
Huntley to Ballentine	2600 ADT
Pine Hills to Huntley	3400 ADT
Pine Hills to Lockwood	6600 ADT
Lockwood to 27th Street	8000 ADT
27th Street to King Ave.	7500 ADT
 Pryor Creek Road -- designated arterial (est. cap. 12,000)	
No traffic counts available	
Estimated	350 ADT

TRAFFIC DESTINATION ASSUMPTIONS

- 70% work-related
- 15% School-related
- 15% misc.

- 57% of trips on Interstate 94 to Billings
- 21% of trips on Interstate 94 to Ballentine
- 22% of trips on Pryor Creek Road to Huntley and beyond

CAPACITY ANALYSIS (Estimates at full development)

I-94 Pine Hills to Huntley	9100	36%	capacity
I-94 Pine hills to Lockwood	12300	49%	"
I-94 Huntley to Ballentine	4700	19%	"
Pryor Creek Road (NB from I-94)	2500	21%	"
Pryor Creek Road (SB from I-94 to 1.6 miles south)	10000	83%	"

APPROACHES AS SHOWN ON PLAT

CIRCULATION AS SHOWN ON PLAT

Channelization--none proposed

TRAFFIC CONTROL DEVICES PROPOSED

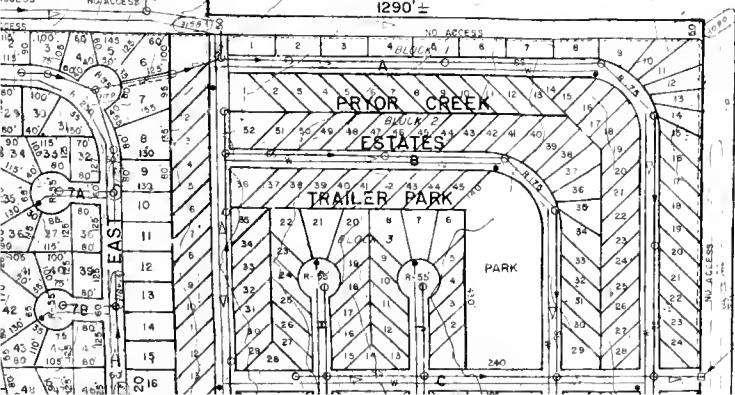
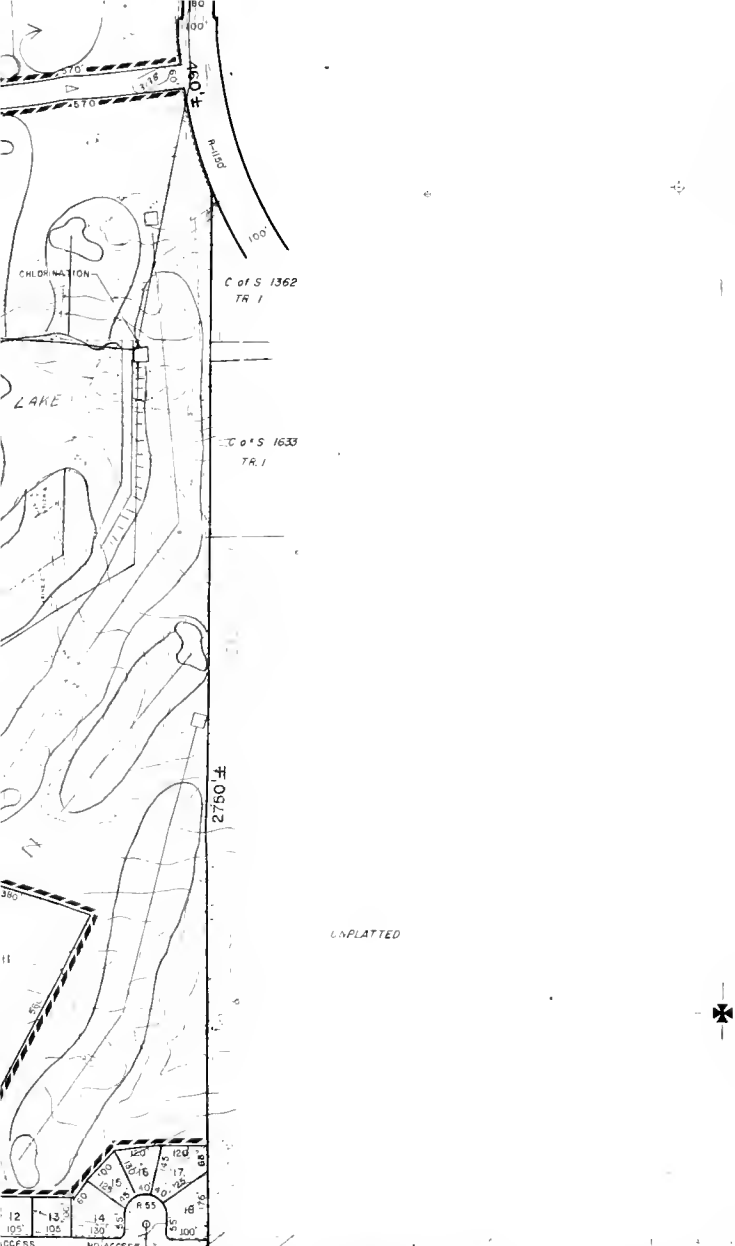
Stop signs at all approaches to Pryor Creek Road

PEDESTRIAN SYSTEM

Underpass on Pryor Creek Road (see plat for location)
Pedistrian crossing on Pryor Creek

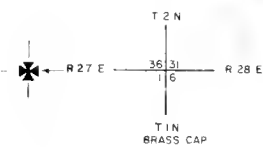


PHASE 3



NOTES

1. Street grades are tentative final grades will be set at the time of construction. Fryor Creek Road has previously set grade.
2. Park Requirement will be met by land dedication (42± Ac.)
3. Zone None
4. Bench Markes will be set when the Improvements are installed. A note referring to the the construction plans will be on the final plats.
5. Existing power lines will be relocated along public right-of-ways.
6. Lots Residential 959, Commercial 3, Association (Lots for water and sewage treatment) 3, Trailer Park Spaces 264
7. Gross Area 476± Acres, Net Area 380± Acres
8. All lots are 10000 sq. ft. to 17000 sq.ft. excepting, Blocks 1,2, & 3 which are 20000± sq. ft., Block 4 Lot 10 7,47± Ac. Block 5 Lot 175,59± Ac. Block 6 Lot 20 4,49± Ac. Block 7 Lot 22 3,36 Ac, Lot 23 2,13± Ac, Lot 26 0,89± Ac, Lot 27 1,18± Ac., Lot 28 0,90± Ac., Lot 29 1,39± Ac., Lot 56 1,93± Ac., Block 9 Lot 16 1,07 Ac Lot 17 1,00± Ac. Lot 37 1,93± Ac., Lot 38 1,38± Ac., Block 19 Lot 11 3,50± Ac. Block 35 Lot 39 1,55± Ac.
9. Fryor Creek has not had a flood plain study.
10. All Radius information on the Master Plan is Center Line Data.
11. Proposed Condominium Lots are Block 7 Lots 23,26,27,28,29, and 56, Block 9 Lots 16,17,37, and 38, Block 19 Lot 11
12. Contour lines dark 10 ft. light 2 ft.
13. Linear feet of street 65680 (Trailer Park not include)
14. All Distances on the Master Plan are --
15. All street intersecting with an arterial or collector will have corner radius of 10 ft.
16. Direction of flow storm drainage.
17. Direction of flow sanitary sewer.
18. Tentative street grades.
19. Manholes.
20. Fire Hydrant.
21. Phase Line.
22. Trailer Park Lots will be 45 ft. wide and 140± long (typical)
23. Sanitary sewer
24. Water Line

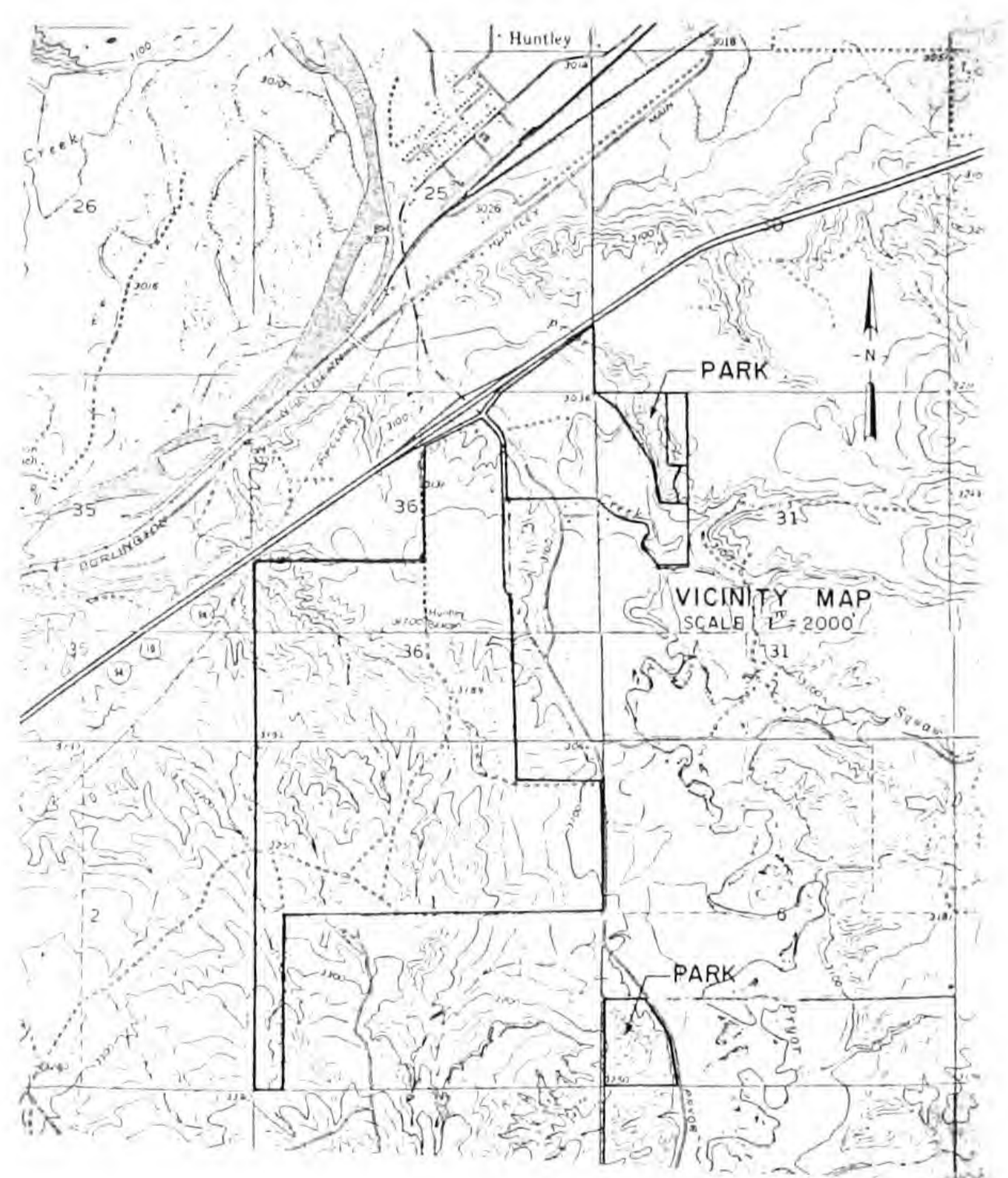


PHASE 2

SANITARY SEWAGE
LIFT STATION



- ADJOINING PROPERTY OWNERS
- Arthur E. & Bonnie E. Seiwert
Huntley Montana 59037
 - Albert Junkert
1142 Howard Ave.
Billings, Montana 59102
 - Lyle J. & Cecile H. Seavy
Huntley, Montana 59037
 - Howard B. & Judith M. Osmundson
Huntley, Montana 59037
 - Victor C. & Velma E. Bruski
Huntley, Montana 59037
 - Lawrence E. Osness
& Phillip H. & Shirley A. Lahner
17901 Park Lane
Livonia Mi. 48152
 - Jesus Y. & Sandra M. Gonzalez
Huntley, Montana 59037
 - Molly & Nick Yurien
& Jon M. & Nancy G. Mousel
Rte. 1
Huntley Montana 59037
 - Buffalo Bluffs Co.
2029 Grand Ave.
Billings, Montana 59102
 - Fred & Morrein Bowen and
Daniel D. & Billie J. Kilbride
2849 Westwood Dr.
Billings, Montana 59102
 - Joe H. Rawlins
310 Securities Bldg.
Billings, Montana 59101
 - Conrad D. & Florence M. Bradstreet
& John & Jennie Waggoner
1710 Patricia Lane
Billings, Montana 59102
 - Kenneth D & Wilma J. Neumann
Box 142
Huntley Montana 59037



C of S 1363

